

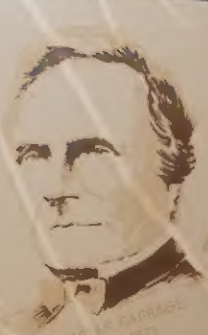
MICHAEL FARADAY
1791-1867

One of the greatest electrical scientists of all time. Among his major discoveries and inventions: the first electrical generator, a rudimentary motor and transformer, electrical induction, the laws of electrolysis, and electromagnetic field theory. The fundamental unit for capacitance, the farad, is named after him.



SAMUEL F. B. MORSE
1791-1872

"What hath God wrought?" With this message, transmitted in 1844 in a code devised by Morse, over a telegraph line he built between Baltimore and Washington, the era of electrical communications was launched.



CHARLES BABBAGE
1792-1871

The grandfather of the modern computer. He developed the basic principles by which today's computers operate and demonstrated them using mechanical devices.



LORD KELVIN (WILLIAM THOMSON)
1824-1907

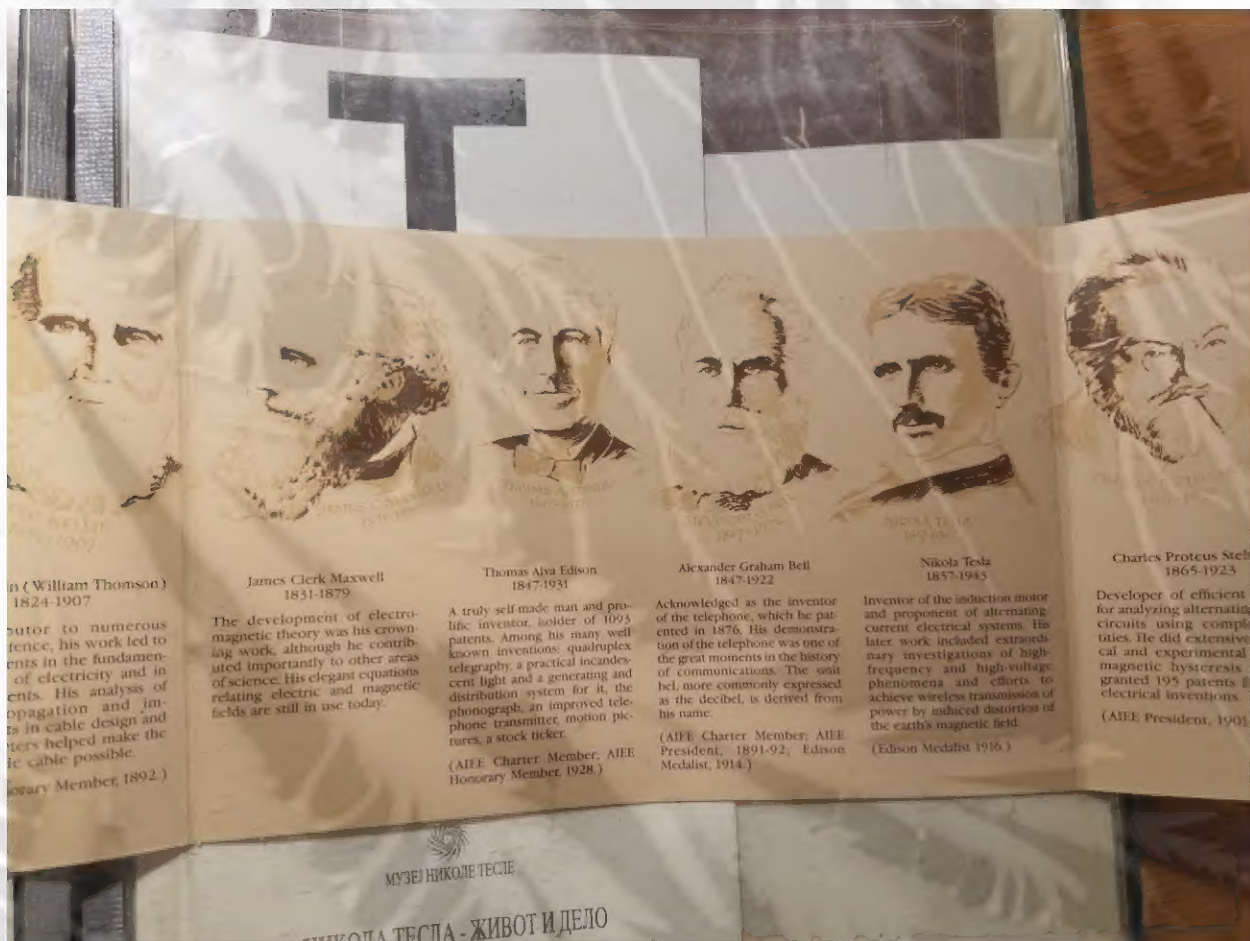
A contributor to numerous fields of science, his work led to advancements in the fundamental theory of electricity and in measurements. His analysis of cable propagation and improvements in cable design and galvanometers helped make the first Atlantic cable possible.

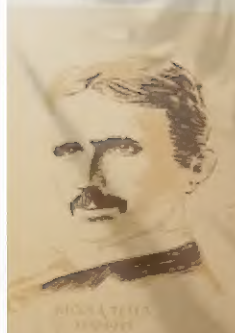
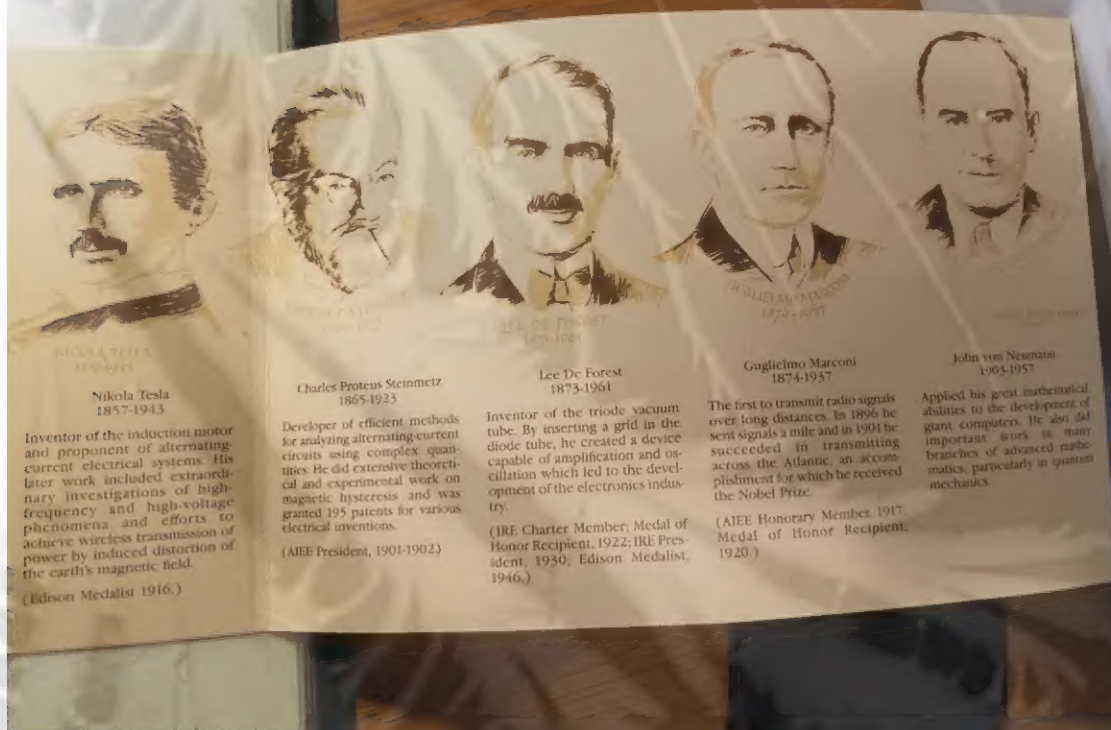
(AIEE Honorary Member 1881)



JAMES CLERK MAXWELL
1831-1879

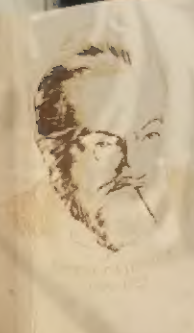
The development of electric and magnetic theory was his crowning work, although he contributed importantly to other areas of science. His elegant equations relating electric and magnetic fields are still in use today.





Nikola Tesla
1857-1943

Inventor of the induction motor and proponent of alternating-current electrical systems. His later work included extraordinary investigations of high-frequency and high-voltage phenomena and efforts to achieve wireless transmission of power by induced distortion of the earth's magnetic field.
(Edison Medalist 1916.)



Charles Proteus Steinmetz
1865-1923

Developer of efficient methods for analyzing alternating-current circuits using complex quantities. He did extensive theoretical and experimental work on magnetic hysteresis and was granted 195 patents for various electrical inventions.

(AIEE President, 1901-1902)



Lee De Forest
1873-1961

Inventor of the triode vacuum tube. By inserting a grid in the diode tube, he created a device capable of amplification and oscillation which led to the development of the electronics industry.

(IRE Charter Member; Medal of Honor Recipient, 1922; IRE President, 1930; Edison Medalist, 1946.)



Guglielmo Marconi
1874-1937

The first to transmit radio signals over long distances. In 1896 he sent signals a mile and in 1901 he succeeded in transmitting across the Atlantic, an accomplishment for which he received the Nobel Prize.

(AIEE Honorary Member, 1917; Medal of Honor Recipient, 1920.)



John van Neumann
1903-1957

Applied his great mathematical abilities to the development of giant computers. He also did important work in many branches of advanced mathematics, particularly in quantum mechanics.

СРПСКА АКАДЕМИЈА
НАУКА И УМЕТНОСТИ

•
МУЗЕЈ НАУКЕ И ТЕХНИКЕ

•
МУЗЕЈ НИКОЛЕ ТЕСЛЕ

•
ГРАДСКИ МУЗЕЈ СУБОТИЦА

ИМАЈУ ЧАСТ ДА ВАС ПОЗОВУ
НА ОТВАРАЊЕ

ИЗЛОЖБЕ

НИКОЛА ТЕСЛА - ЖИВОТ И ДЕЛО

У среду, 22. марта у 12 сати

Изложбени простор Музеја
(Градска кућа 1 спрат)

Генерални спонзор:
ЕПС Електројоводина
ЕД "Суботица"

SRPSKA AKADEMIJA
NAUKA I UMETNOSTI

•
MUZEJ NAUKE I TEHNIKE

•
MUZEJ NIKOLE TESLE

•
GRADSKI MUZEJ SUBOTICA

ИМАЈУ ЧАСТ ДА ВАС ПОЗОВУ
НА ОТВАРАЊЕ

IZLOŽBE

NIKOLA TESLA - ŽIVOT I DELO

U sredu, 22. marta u 12 sati

Izložbeni prostor Muzeja
(Gradska kuća 1 sprat)

Generalni sponzor:
EPS Elektrovojvodina
ED "Subotica"







Tesla je prijavio 40 patenata iz oblasti polifaznih sistema. 1888. g. drži svoje prvo predavanje „Novi sistem motora i transformatora naizmenične struje“ pred Američkim Institutom elektrotehničkih inženjera.

Iste godine Džordž Vestinghaus, industrijalac, otкупљуje pravo na korišćenje Teslinih patenata i počinje sa proizvodnjom motora. Pronalazak polifaznog sistema došao je do punog izražaja pri podizanju hidrocentrale na vodopadima Nijagare. Izgradnja je trajala od 1891 – 1896. g. kada su svi agregati pušteni u rad.

Devedestih godina prošlog veka Tesla počinje sa radom u oblasti visokofrekventnih struja. Tokom 1891. g. prijavljuje niz patenata iz oblasti proizvod enja struje visokih učestanosti i visokih napona. Iste godine podnosi patentnu prijavu za uređaj poznat pod nazivom „Teslin transformator“. Razne varijante oscilatora pojavljuju se u Teslinim patentima sve do 1896. g. Rezultate svojih radova na području visokofrekventnih struja izložio je u predavanjima između 1891 i 1893. g. Od 1897. g. sledi niz patenata iz oblasti radiotehnike. 1898. g. konstruiše brod sa bežičnim upravljanjem.

NIKOLA TESLA COMPANY

8 West 40th St.
TEL. 9090 BRYANT
NEW YORK

Tesla je prijavio 40 patenata iz oblasti polifaznih sistema. 1888. g. drži svoje prvo predavanje „Novi sistem motora i transformatora naizmenične struje“ pred Američkim Institutom elektrotehničkih inženjera.

Devedestih godina prošlog veka Tesla počinje sa radom u oblasti visokofrekventnih struja. Tokom 1891. g. prijavljuje niz patenata iz oblasti proizvodnja struje visokih učestanosti i visokih napona. Iste godine podnosi patentnu prijavu za uređaj poznat pod nazivom „Teslin transformator“. Razne

Iste godine Džordž Vestinghaus, industrijalac, ot-



Se pomnoži — omamljenost
na tvoj se penja: ispravi tu
se boje, da čete pasti,
tu, spustene ruge, ali, ukoro,
na meteža života, utica, visine, na
nebuduje, hratroa, uduševljenje,
velu kor: veli korci postaju žuriti
suna vti podnjete da vidite — zadržujuće
visoko





NIKOLA TESLA
COMPANY

West 40th St
TEL. 9090 BRYANT
NEW YORK

Tesla je dolazio u domovinu dva puta. Prvi put, bilo je to 1889. g. posle razgledanja Svetske izložbe u Panzu.
Početkom februara 1892 g., Tesla dolazi u Evropu i drži predavanja u Londonu i Panzu. Na poziv iz domovine zbog bolesti majke, otkazuje poruke za predavanja u drugim evropskim gradovima. Julu u Gaspic Posetuje Zagreb, gde govori o mogućnosti elektrifikacije pomoću sistema naizmenične struje. Preko Budimpešte stiže u Beograd u julu 1892 g. gde u zgradu Kraljevićevog Mišinskog zlatara dolazi da se o svojim delatnostima razgovara.

Tokom 1881 i 1882 godine Tesla boravi u Budimpešti gde radi u telefonskom društvu. Ovo za poslenje daje mu velike mogućnosti da dokaže svoje pronalazačke sposobnosti. Usvršio je aparat za pojačanje glasa koji nikad nije patentirao i objavio. Tu u Budimpešti potaknut Geteovim stihovima dolazi do genijalnog principa ubrzanog magnetnog polja.





NIKOLA TESLA COMPANY

Posle boravka u Budimpešti, Tesla odlazi u Pariz gde kratko vreme radi za Edisonovo kontinentalno društvo koje je bilo ogranak istoimenog Društva u New Yorku.
Posle Pariza radi u Strazburu, gde je 1883 g. prvi put priključio pravo na prijemni aparat i njegov polja konstruisao je prvi transformator. U Parizu Tesla pokušava da zainteresuje evropske stručnjake radi sredstva za realizaciju svojih ideja. Kako za njegov rad nije bilo dovoljno sredstava, Tesla se odlučuje za odlazak u Ameriku. Na sledećem svetu stigao je juna 1884 g.



8 West 40th St
JUGO BRYANT
NEW YORK

U vreme radi kod Tomasa Edisona koji je za njega imao brojne patente ali nije bio zainteresovan za Teslin sistem naizmenične struje. 1886 g. Tesla osniva svoju prvu kompaniju "Tesla Electric Co." u cilju razrađivanja sistema učenja električnog Osnivanjem kompanije "Tesla Electric Co." 1887 g. konačno dolazi do materijalne pomoći za realizaciju polifaznog sistema pri izdavanju prvih patenata na električnu energiju. Ovi prvi patenti pokazuju da se radi o mnogobrojnim brzinom.



Moje prve nepremeno trošenje
između agonije, neuspjeha i blaženstva
uspjeha

Bili sam, to je tajna odeljka; Bili sam, to je
kao kada se klate radaju.



NIKOLA TESLA
COMPANY

8 West 40th St
NEW YORK

Tesla je prijavio 40 патенata iz oblasti potražnih sistema 1888. g. drži svoje prvo predavanje „Novi sistem motora i transformatora naizmjenične struje“ pred Američkim Institutom elektrotehničkih inženjera.

Iste godine Džordž Vestinghaus, industrijalac, je kupio pravo na koncesiju Tesla'sh патенata i počeo sa pravljenjem motora. Prvi put je pokazao svoj sistem, koji je do punog izražaja pri podizanju i frekvencije na vodopadima Nijagare. Izgrađen je 1891. 1896. g. kada su svi agregati postali u rad.

Devadesetih godina prošlog veka Tesla počinje sa radom u oblasti visokofrekventnih struja. Tokom 1891. g. prijavio je niz патенata iz oblasti proizvodnje struje visokih učestanosti i visokih napona. Iste godine podnosi patentni prijavu za uređaj poznat pod nazivom „Tesla's transformator“. Razne varijante oscilatora pojavljuju se u Tesla'shim патенatima sve do 1896. g. Rezultate svojih radova na ponašanje korekventnih struja objavio je u predavanjima između 1891. 1903. g. i od 1897. g. vodi niz патенata iz oblasti radioelektrike. 1898. g. konstruiše brod sa bezžicom upravljanjem.





NIKOLA TESLA COMPANY

Da bi nesmetano radio i kod najvišeg naponu, Tesla je graditi eksperimentalnu laboratoriju. Eksperimentirao sa strujama visokih učestanosti i uspešno nima od nekoliko miliona volti, ostvaruje bezbednu telegrafiju na daljinu od preko 1000 km. Oduševljen novim otkrićima, 1901 g. podiže veliku „svetsku radiostanicu“ na Long Islandu i radi na ostvarivanju ideje o povezivanju svetskih komunikacija u jedinstveni sistem. Započete radove nije dovršio usled nedostatka materijalnih sredstava.



Od 1905 g. Tesla podnosi patente iz oblasti turbin, pumpi, fluidike, gramofona, merača brzine i brzine prirode. Želi da sa novim patentima obezbedi sredstva za nastavak radova na Long Islandu, ne uspeva i njegov život postaje sve teži. Poslednje patente daje u oblasti aviacije.

logiziranje i njihovu dobrotu koje su im
 u stanju — protiv njihovih majstara.
 Svojom životu ova tri ljudi dadas do-
 napred, gorišta duboko, ljubavju su svoje
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 simbol "Excelsior"





NIKOLA TESLA
COMPANY

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STANLEY WOLDER
Counsellor at Law

521 FIFTH AVENUE
NEW YORK 17, N. Y.
MURRAY HILL 7-3233

September 17, 1965

The Tesla Society
P. O. Box 4058
Minneapolis, Minnesota 55414

Att: Mr. Leland I. Anderson,
Secretary

Dear Mr. Anderson:

Thank you for your letter of September 7.

I first met Dr. Tesla in 1925 or 1926, when he was exhibiting at the I.R.E. Convention at the Kingsbridge Armory in New York City, and found him to be an unusually interesting individual.

I am enclosing your post card marked in accordance with your suggestion.

Sincerely yours,

SW:tnb
Encl.

NIKOLA

The Tesla Society
P. O. Box 4038
Minneapolis, Minnesota 55414

Att: Mr. Leland I. Anderson,
Secretary.

NIKOLA

The Tesla Society
P. O. Box 4038
Minneapolis, Minnesota 55414

Att: Mr. Leland I. Anderson,
Secretary.

At the close of 1889, having worked one year in the
shop of George Eastinghouse, Pittsburgh, I experienced an
urge to leading the resuming my interrupted investigations
there, notwithstanding a very lengthy preparation by him, I
left for New York in late by my laboratory work. But owing to
pressing demands by several foreign scientific societies I
made a trip to Europe where I lectured before the Institution
of Mechanical Engineers and Royal Institution in London and
the Societe de Physique in Paris. After this and a brief
visit to my home in Yugoslavia I returned to this country
in 1891 eager to devote myself to the subject of predilection
of my thoughts: the study of the universe.

During the succeeding two years of intense concentration
I was fortunate enough to make two far-reaching discoveries.
The first was a general theory of gravity, which I have worked
out in all details and hope to give to the world very soon.
It explains the motion of the Moon and the motion of heavenly
bodies under its influence so satisfactorily that it will put
an end to idle speculations and false conceptions, as that of
curved space. According to the relativists, space has a
tendency to curvature owing to an inherent property or presence
of celestial bodies. Granting a semblance of reality to this
fantastic idea, it is still self-contradictory. Every action
is accompanied by an equivalent reaction and the effects of
the latter are directly opposite to those of the former.



- 2 -

Supposing that the bodies act upon the surrounding space causing curvatures of the same, it appears to my simple mind that the curved space must react on the bodies and, producing the opposite effects, straighten out the curves. Since action and reaction are consistent, it follows that the supposed curvature of space is entirely impossible. Not only if it existed it would not explain the action of the bodies as observed. Only the existence of a field of force can account for them and its assumption dispenses with space curvature. All literature on this subject is futile and destined to oblivion. So are also all attempts to explain the workings of the universe without recognizing the existence of the ether and the indispensable function it plays in the phenomena.

My second discovery was a physical truth of the greatest importance. As I have searched the scientific records in more than a half dozen languages for a long time without finding the least anticipation, I consider myself the original discoverer of this truth, which can be expressed by the statement: There is no energy in matter other than that received from the environment. On my 79th birthday I made a brief reference to it, but its meaning and significance have become clearer to me since then. It applies rigorously to molecules and atoms as well as to the largest heavenly bodies, and to all matter in the universe in any phase of its existence from its very formation to its ultimate disintegration.



U. S. PAT. OFF.

Being perfectly satisfied that all energy in matter is
drawn from the environment, it was quite natural that when
radioactivity was discovered in 1896 I immediately started a
search for the external agent which caused it. The existence
of radioactivity was positive proof of the existence of external
rays. I had previously investigated various terrestrial
disturbances affecting wireless circuits but none of them or
any others emanating from the earth could produce a steady
sustained action and I was driven to the conclusion that the
activating rays were of cosmic origin. This fact I announced
in my papers on Roentgen rays and Radiations contributed to
the Electrical Section of the Acad. Sci. in 1897. However, as radio-
activity was observed widely all in other widely separated
parts of the world, it was obvious that the rays must be im-
pinging on the earth from all directions. Now, of all bodies
in the Cosmos, our sun was most likely to furnish a clue as
to their origin and character. Before the electron theory
was advanced, I had established that radioactive rays con-
sisted of particles of primary matter not further decompos-
able, and the first question to answer was whether the sun is
charged to a sufficiently high potential to project such
particles and produce the effects noted. This called for a
prolonged investigation which culminated in my finding that
the sun's potential was 216 billions of volts and that all
such large and hot heavenly bodies emit cosmic rays. Through



Further wide spread observation of these rays has been proved conclusively, and to deny it would be like denying the light and heat of the sun. Furthermore, there are still some doubters who prefer to stand the whole thing on their heads. One of them declared recently that they were not from any remote region in which matter is converted into energy. I can assure that this is not true for there is no place where such a process occurs in this or any other universe beyond our ken.

A few words will be sufficient in support of this conclusion. The kinetic and potential energy of a body is the result of motion and determined by the product of its mass and the square of velocity. Let the mass be reduced, the energy is diminished in the same proportion. If it be reduced to zero the energy is likewise zero for any finite velocity. In other words, it is absolutely impossible to convert mass into energy. It would be different if there were forces in nature capable of imparting to a mass infinite velocity. Then the product of zero mass with the square of infinite velocity would represent infinite energy. But we know that there are no such forces and the idea that mass is convertible into energy is rank nonsense.

While the weight and character of the rays observed near the earth's surface are sufficiently well ascertained, the associated cosmic rays observed at great distances present



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a riddle for more than 25 years, chiefly because it was found that they increased with altitude at a rapid rate. My investigations have brought out the astonishing fact that the effects at high altitudes are of an entirely different nature, being no related whatever to cosmic rays. These are particles of matter projected from celestial bodies at very high temperatures and currents of enormous electric potentials. The effects at great altitudes, on the other hand, are due to waves of extremely small frequency produced by the sun in a certain region of the atmosphere. This is the discovery which I wish to make known. The process involved in the generation of the waves is the following: The sun projects charged particles constituting an electric current which passes through a conducting stratum of the atmosphere approximately 10 kilometers thick enveloping the earth. That is a transmission of energy exactly as I illustrated in my experimental lectures in which one end of a wire is connected to an electric generator of high potential, its other end being free. In this case the generator is represented by the sun and the wire by the conducting air. The passage of the solar current involves the transference of electric charges from particle to particle with the speed of light, this resulting in the production of extremely short and



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penetrating waves. As the air stratum mentioned is the source of the waves it follows that the so-called cosmic rays observed at great altitudes must increase as this stratum is approached. My researches and calculations have brought to light the following facts in this connection: (1) the intensity of the so-called cosmic rays must be greatest in the zenithal portion of the atmosphere; (2) the intensity should increase more and more rapidly up to an elevation of about 20 kilometers where the conducting air stratum begins; (3) from there on the intensity should fall, first slowly and then more rapidly, to an insignificant value at an altitude of about 30 kilometers; (4) the display of high potential must occur on the free end of the terrestrial wire, that is to say, on the side turned away from the sun. The current from the latter is supplied at a pressure of about 216 billion volts and there is a difference of 2 billion volts between the illuminated and the dark side of the globe. The energy of this current is so great that it readily accounts for the aurora and other phenomena observed in the atmosphere and at the earth's surface.

For the time being I must content myself with the announcement of the salient facts, but in due course I expect to be able to give more or less accurate technical



- 7 -

data relating to all particulars of this discovery.

To go to another subject, I have devoted much of my time during the year past to the perfecting of a new small and compact apparatus by which energy in electromagnetic waves can be transmitted through interstellar space to any distance without the slightest dispersion. I had in mind to confer with my friend George S. Hale, the great astronomer and solar expert, regarding the possible use of this invention in connection with his own researches. In the meantime, however, I am expecting to put before the Institute of France an accurate description of the device with data and calculations and claim the Pierre Gassman Prize of 100,000 francs for work of eminence with other work, feeling perfectly sure that it will be awarded to me. The money, of course, is a trifling consideration, but for the great historical honor of being the first to achieve this miracle I would be almost willing to give my life.

My most important invention from a practical point of view is a new form of tube with apparatus for its operation. In 1896 I brought out a high potential targetless tube which I operated successfully with potentials up to 4 million volts from '96 to '98. This device was adopted by many imitators



- 1 -

with slight modifications it is employed even now in all
research laboratories and scientific institutions here and
in other countries, and virtually all atomic investigations are
conducted on this type. At a later period I managed to produce
very much higher potentials up to 18 million volts, but then I
encountered insurmountable difficulties which convinced me
that it was necessary to invent an entirely different form of
tube in order to carry out successfully certain ideas I had
conceived. This was I found far more difficult than I had
expected, not so much in the construction as in the operation
of the tube. For many years I was baffled in my efforts,
although I made a steady slow progress. Finally though, I
was rewarded with complete success and I produced a tube
which it will be hard to improve further. It is of ideal
simplicity, yet subject to wear and can be operated at any
potential, however high, that can be produced. It still carries
heavy currents, therefore has a great deal of energy within practical
limits, and it permits easy control and regulation of the beam.
I expect that this invention, when it becomes known, will be
universally adopted in preference to other forms of tubes,
and that it will be the means of obtaining results undreamed
of before. Among others, it will enable the production of
cheap radium substitutes in any desired quantity and will
be, in general, immensely more effective in the smelting of



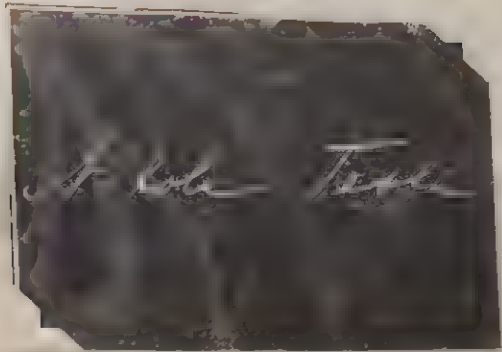
- 3 -

time and the transmutation of matter. I am hopeful that it will be possible by its use to carry out a process in which there should be an almost unlimited, and easy, life. However, this tube will not open up a way to utilize atomic or sub-atomic energy for power purposes. According to the physical laws I have discovered there is no possibility of using the atomic structure, and even if there were any, the laws of the atoms greatly exceed the output, producing something, preventing use of the liberated energy.

Some papers have reported that I had promised to give a full description of my tube and the apparatus to be on the present occasion. This has caused me considerable annoyance as, owing to some obligations I have undertaken regarding the application of the tube for important purposes, I am unable to make a complete disclosure now. But as soon as I am relieved of these obligations a technical description of the device and of all the apparatus will be given to scientific institutions.

There is one more discovery which I want to announce at this time, consisting of a new method and apparatus for the obtaining of vacua exceeding many times the highest heretofore realized. I think that as much as one-billionth of a micron can be attained. What may be accomplished by means of such vacua is a matter of conjecture, but it is obvious that they will make possible the production of much more intense

effects in electron tubes. My ideas regarding the electron are at variance with those generally entertained. I hold that it is a relatively large body carrying a surface charge and not an elementary unit. When such an electron leaves an electrode of extremely high potential and in very high vacuum, it carries an electrostatic charge many times greater than the normal. This may astonish some of those who think that the particle has the same charge in the tube and outside of it in the air. A beautiful and instructive experiment has been contrived by me showing that such is not the case, for as soon as the particle gets out into the atmosphere it becomes a blazing star owing to the escape of the excess charge. The great quantity of electricity stored on the particle is responsible for the difficulties encountered in the operation of certain tubes and the rapid deterioration of the same.



AUTOGRAPH MANUSCRIPTS
of
Nikola Tesla

Vol. II

THE GEORGE ELLERY HALE PAPERS - ACCL 34
June 4, 1908

Dr. George Ellery Hale
Director of the Solar Observatory
of the Carregie Institution,
Mount Wilson, California

Dear Mr. Hale:

I learned with pleasure of your forthcoming book, The Study of Stellar Evolution, from which I expect to derive much needed information. I have greatly regretted that since our meeting at Chicago years ago, we have never been able to get again together. Your work interests me very much, and I am heartily in sympathy with you. Please do not fail, the next time you come to New York, to call on me and give me an opportunity to exchange a few ideas with you.

Sincerely yours,

N. Tesla

June 15, 1908

Mr. Nikola Tesla
Long Island, New York

Dear Dr. Tesla:

Thank you very much for your letter of June 4th. I have often remembered with pleasure our discussions in New York, and hope to see you again in the near future. If you ever have time to come to California, be sure to pay us a visit here. Believe me, with sincere regards,

Yours very sincerely,

George Ellery Hale

(COPY)

Attachment to E. W. Rice
to Thomson + C. P. S.
143

TESLA LABORATORY.

Long Island, N. Y., June 3, 1908.

E. W. Rice, Esq.,
General Electric Company,
Lynn, Mass.

My dear Mr. Rice:-

I am introducing a new invention of mine, and require in this connection direct current generators and motors as light as possible. Having had the opportunity of seeing some of your light weight machines at the New York Transportation Company, I have been struck with improvements you have made and recognize that it will be difficult to do better.

My invention has been tested dynametrically by myself and other engineers, but in the use I now contemplate, electric transmission and reading would be most suitable for my purpose. What I am most anxious about is to obtain a set of tabulated data in this matter, and it would further my purposes very much if I could obtain from you a generator capable of developing, say 80 HP. at speeds of from 800 to 1200 revolutions per minute, and two motors to run, preferably, from 1800 to 2000 revolutions per minute, which would be driven from the generator.

If the machines you have developed are on the market, we would buy them. If not, perhaps I might, through the influence of my technical friends and fellow-engineers on your staff, get this machinery for a certain term, to complete my tests, on any conditions that it would please your company to make. I shall frankly acknowledge your help in my presentation of the work to some Engineering Society, and can state with conviction that what I am doing cannot be but of interest to your Company.

I am writing a formal letter to the General Electric Company in this city, referring them to you, and would be obliged to you if you will do yourself what you can, and also refer this matter to Prof. Elihu Thomson and Dr. Steinmetz, for whose assistance I shall be much obliged. Anticipating the favor of an early reply, I remain

Sincerely yours,

(Signed) N. Tesla

(COPY)

Attachment to E. W. Rice
to Thomson + C. P. S.

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Sincerely yours,

(Signed) N. Tesla

June 10th, 1903.

Prof. Elihu Thomson,
Dr. C. P. Steinmetz.

I enclose herewith copy of letter received from Nikola Tesla. I do not know any more than is stated in his letter. I would be glad to have your views.

E. W. Rice, Jr.

200

Schenectady, N. Y., June 15th, 1908.

Dr. E. W. Rice, Jr.,

Building.

Dear Sir:-

Received your note of June 10th, enclosing copy of letter of Mr. Nikola Tesla. The letter appears to me characteristic of Tesla, that is, unintelligible. All I can make out is, that he wants some light generators and motors, but how light, and for what purpose, is not stated. As a formal letter has been addressed to the New York Office by Tesla, it might be best to have somebody of the New York Office see him and get more particulars, and then inform us. The only guess I can make is that Tesla is experimenting with aerial navigation.

I doubt however, whether it would be advisable for the General Electric Company to enter into any relation with Tesla: his actions and utterances for some years have been such, that I believe he has become seriously unbalanced mentally, and when loaning him apparatus or in any other way approaching the project, the liability exists, that in some of his irresponsible newspaper articles, Tesla may claim that the General Electric Company is backing his work, and this would hardly increase the Company's engineering standing.

Yours truly,

CPS-JUN-07

C O P Y.

Tesla Laboratory.

Long Island, N. Y.

New York, June 24, 1902.

Edward W. Whitaker, Esq.,
Patent Attorney,
Washington, D. C.

My dear Sir:--

I regret very much that your communication containing the enclosed clippings has been overlooked. Permit me, at this late date, to thank you for the expression of your appreciation.

The efforts of Marconi in wireless telegraphy have been the first in this country, but not abroad. The records show many anticipations in France and England.

The devices used until quite recently were, however, for all practical purposes, worthless. Neither Marconi or anybody else has succeeded in transmitting a message to any appreciable distance without the use of my apparatus. Last October the Hertzian appliances were abandoned and my apparatus substituted and the messages were, of course, easily transmitted. There is nothing particularly meritorious in the attempt, however, for I have already in 1899, as you may see from my patent of April 18, 1905, passed a heavy current around the earth (over 100 amperes) and excited the planet resonantly.

As a matter of fact, to transmit wireless messages, telegraphic or telephonic, under practical conditions and to appreciable distances, five of my discoveries are necessary:

First, my method of oscillatory conversion by means of condensers; second, the so-called "Tesla transformer"; third, my apparatus for the transmission of energy without wire, comprising grounded, resonant circuits; fourth, my methods and apparatus for individualizing signals, and, fifth, my discovery of the stationary waves.

Believe me,

Very truly yours,

N. Tesla.

See also Tesla's reference to article
in the Electrician (London), Feb. 27, 1903,
in the Electrical World article for Jan. 7, 1905,
page 22.

C. P. Y.

Tesla Laboratory.

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Believe me,

Very truly yours,

N. Tesla.

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

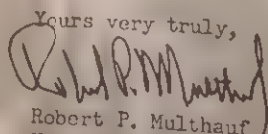
July 14, 1958

Mr. Ieland I. Anderson
1615 East River Terrace
Minneapolis 14, Minnesota

Dear Mr. Anderson:

Mr. King found this letter in our files on Tesla and thought you might be interested in adding it to your records, if you do not already have it.

Yours very truly,



Robert P. Multhauf
Head Curator
Department of
Science and Technology

Enclosure

Tesla Letter dated June 24, 1908

JOHN ESCH, 745 E. CIMAARON.

VINING, . . .

Continued from p. 1, 1881

Mr. [unclear]

TO ESCH & VINING, DR

CONTRACTORS...

...and BUILDERS

1/2" [unclear]	16' 7 1/2"
3/4" [unclear]	24"
1/2" [unclear]	15"
1/2" [unclear]	45"
1/2" [unclear]	9' 7 1/2"
1/2" [unclear]	1' 20"
1/2" [unclear]	12"
1/2" [unclear]	
1/2" [unclear]	
1/2" [unclear]	135"
1/2" [unclear]	60"
1/2" [unclear]	170"
1/2" [unclear]	75"
1/2" [unclear]	15' 3 1/2" 11 1/2"

Rec'd [unclear]
9/16/45 [unclear]

E. C. WOODWARD,
Assayer and Chemist.
Telephone 315 26 E. Kiowa Street.

Colorado Springs, Colo., Jan. 11, 1919

Dear Sister Lena.

Your last letter
just rec'd & I can't help but think I
must seem dead to you for not answering
your last two letters. Really I have thought
of writing to you for some time past --
but since the mill has been closed I
have tried to get something else to keep
me busy but so far have found nothing
except my efforts towards collecting what
is due me from Mr. T. ^(Vesta) So far he has
paid me enough to have a balance due
me of \$828⁵⁹ & you certainly realize what that
means to a man of my financial caliber.

I wish you would not speak of the
good things you have to eat at home, for
I have so wished I could come there this
winter & share in the Celery Salad, roast
pooose, Sauer Kraut, & Sauce etc. that
it made me almost famished when I read
your letter in regard to these things.

The last letter I had from the Poys

2/

was to the effect that they had made
a small shipment of ore but I do not
know how much they realized on it. Otto told
me he would write me what it gave.
When the mill closed here I had 23 days
salary due me, & from latest reports I am
apt to get that sometime within the next
14 days. It's a fact that if I get what
(TESLA)
Mr. T. owes me I shall make a trip home
& get fat, after that I believe I would
venture to go to Ariz. & see the boys &
thin. I don't know just what I would
attempt. I met Mrs. Mitchell on the
St. a few days ago & she spoke of you
& wanted to know if I ever heard from
(?)
you. I see Mr. Zehrun quite often but
have not met his wife. Since you left
here. We are having delightful weather here
at present & wish you could be here to
go to MANITOU & other places of interest
with me. while I am not working.

I have not written since

she was here. I certainly should have
but it seems I'm not much of a letter
writer after all. I went & registered the
other day & if I vote it will be for the first
time I have done so since I came to Colo.
As to how I will vote is a question?
One thing sure & that is I shall not
place an X at the top of my ticket.
The state issue is the most important
in Colo. this year.

While I would like to see August get
, I'm afraid he won't be able to carry
enough Rep. votes. I see the Hon?? J. B. Howten (?)
is on the ticket in place of Julius Barnett
Driscoll (?). I would like to have a vote
in -- W - on that account. I certainly
would vote for him not (?), because he is
so honest towards the person who has
the most cash.

I am glad you enjoy the papers. I
always aim to send all of them for
the week, but sometimes some of them are

4/

lost at my boarding place. I am
glad to hear that Gerty is feeling better
& would love to drop in accidentally just
to see how she would act. You may tell
her for me that I will write her a
letter in the near future.

I hope to be able to write you better news
as to my working in the near future
& in the meantime let me hear from you
again. I enjoy your letters very much.
With best wishes to all & love to you,
Gerty & Mother. I am your Bro

Carl.

Goodby.







202 Metropolitan Tower,
December 29th, 1910.

My Dear Mr. Duffner:

I was glad to receive your greetings of the Season which would seem to indicate that you are a good fellow after all, although you have given me considerable trouble. I should have expected a man of your intelligence to have understood the situation.

I remain,

Reciprocating in your good wishes,

Yours very truly,

C. J. Duffner, Esq.,
Watertown, So. Dak.

RALPH J. HAWKINS
ATTORNEY AND COUNSELOR AT LAW
SYNDICATE BUILDING
PATCHOGUE, NEW YORK

June 18, 1907

Nikola Tesla, Esq.,
The Waldorf Astoria, N. Y. C.

Dear Sir:-

On the 15th I received a letter from Mr. Schreff saying that you would resume the weekly payments on account of Eisermann. If you wish to resume your weekly payments, I think you should pay at least ten dollars a week. Of course I do not know when you will stop paying, and I shall not consent to this unless you will pay ten dollars a week.

Yours very truly,

RJH/E

Accepted by J. J. Lawton
J. J.

OLIVER INSISTS THAT TESLA PAY HIS DEBTS

FOR \$500.00 WILL BE
PAID THIS WEEK.

OLIVER INSISTS THAT
TESLA PAY HIS DEBTS

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GUNTON'S
MAGAZINE

VOLUME XXII

NO. 1

NEW YORK
JANUARY 1891



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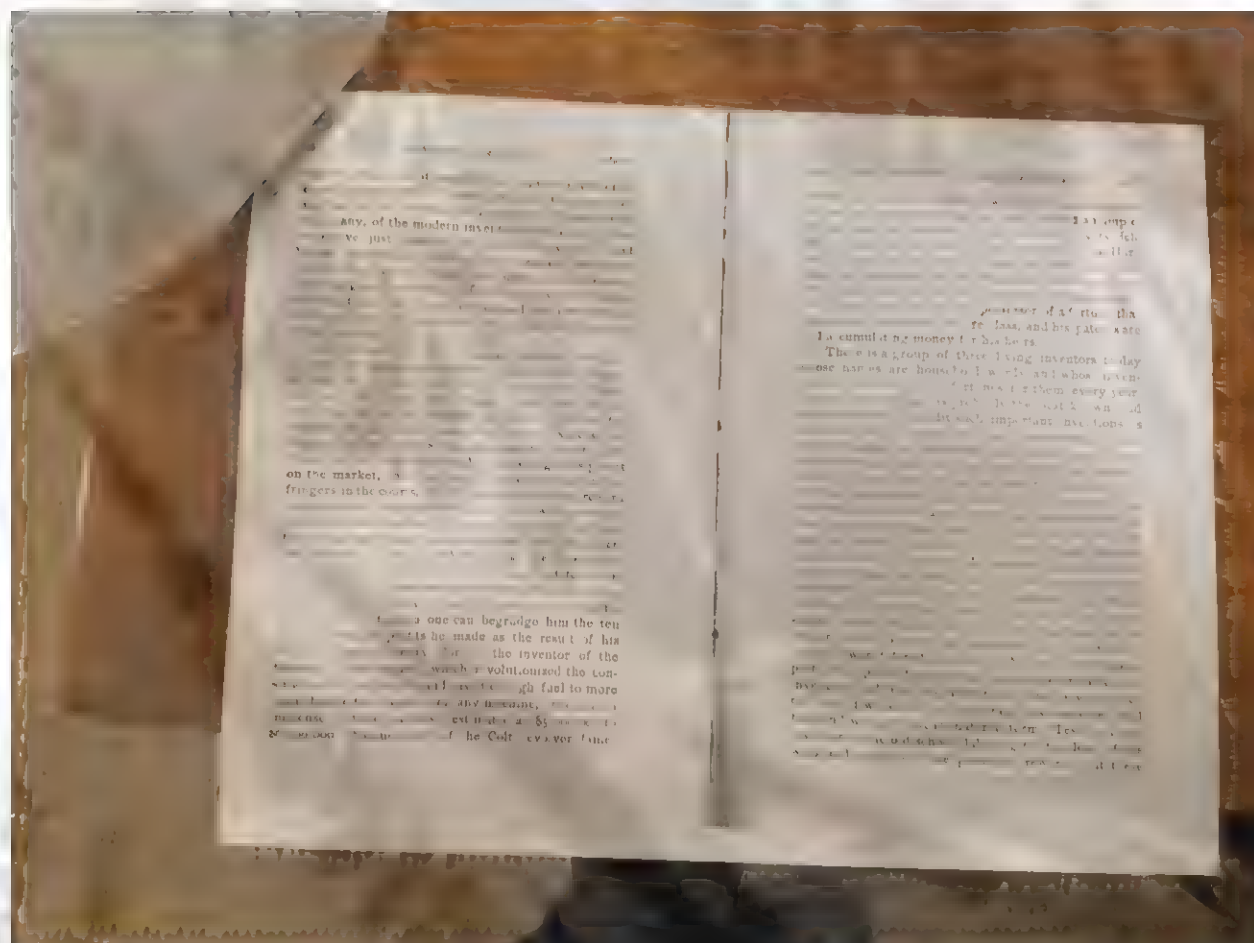
When the complete history of invention has
 been written, it will inevitably prove a popular book to read
 as a series of chapters of a romantic nature that
 adorn its pages. The modern word
 comes from the Latin *invenire* which literally
 means to come or stumble upon by chance.
 It is used to denote the accidental
 discovery of a new principle or
 method.

The history of invention is a long and
 varied one. It is a story of the human
 mind at work, of the struggle to
 overcome the obstacles of nature and
 to create a better world for
 ourselves. It is a story of the
 triumph of the human spirit over
 the forces of ignorance and
 superstition. It is a story of the
 progress of the human race, of the
 growth of our knowledge and
 of our power. It is a story of the
 triumph of the human mind over
 the forces of nature and of the
 creation of a new world for
 ourselves.

There are many theories as to the origin of
 invention. Some believe that it is the
 result of a sudden inspiration, a
 flash of genius. Others believe that it
 is the result of a long and arduous
 process of discovery. Still others
 believe that it is the result of a
 combination of factors, of a
 sudden inspiration followed by a
 long and arduous process of
 discovery.

of this patent is said
to be a million dollars—
a snap for pocket books
and a fortune. The

[illegible][illegible]



6017 Y'S M IGAUNA

flowing in upon him at a rate that precluded
 saving. It is said that if he would so
 native genius to the discovery and many
 articles of general interest now he could
 millions in a few years but he prefers to
 own was working out a scheme to
 never return him much over half

third member of this group of
was associated with Professor
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or bankruptcy, ready to topple into ruin
tion of the United States government of over 200 million
grant of real land grants, regardless of domestic cir-
circumstances. This is what a suddenly recruited army of
of the police, rather than an equally sudden spasm
of domestic squabbling, are asking us to believe. It is
of a second patronage grove planter the longer the agri-
trust and free trade expands.

part of the ...
... college ...
Atkins is a ...
not in it ...
... in the ex ...
... Mr. Hecox ...
page 21 of the report ...

Mr Atkins

Oct 15 - 1901



Considerations relative to role of energy delivered is
any point of globe with long distance apparatus
Assume that a grounded secondary is employed con-
tained by a primary through which condenser discharges
but both the circuits be a perfect line so that
the secondary system vibrates the same rate whether the
primary be closed or open. The form of wave in the
an illustrated diagram. At a primary system the



energy, as is somewhere in the middle
of wave train primary or open in
etc vibrations in secondary circuit
In the form of electrical resonance
the current and e.m.f. are in phase

hence the power is large, given by the product of these given
in during each half wave but it must be remembered
that the energy is passing from side to side, iron and transformer
the actual power is only half supplied by primary. The secondary
must however the amplitude and thus in many cases when
desires a single vibration rate for an antenna in
telegraphy when a few vibrations are wanted. Sparking in
resonance with a tuning circuit set as the case when an
expected as resonance during one wave

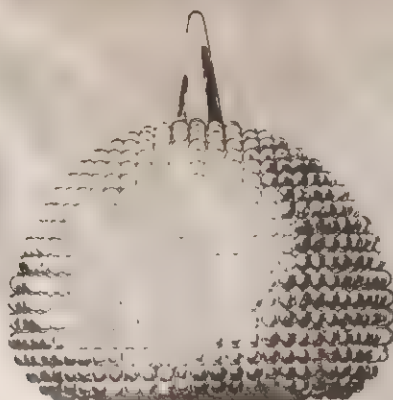
In previous examples $E_{max} = \frac{Q}{C} = 10^6$ volt Current 2000 amp $I = 4000$ amperes
the for largest supply rate of power will be $E_{max} I_{max} = \frac{Q}{C} \times 10^6 \times \frac{Q}{C} = 10^{12}$ watts

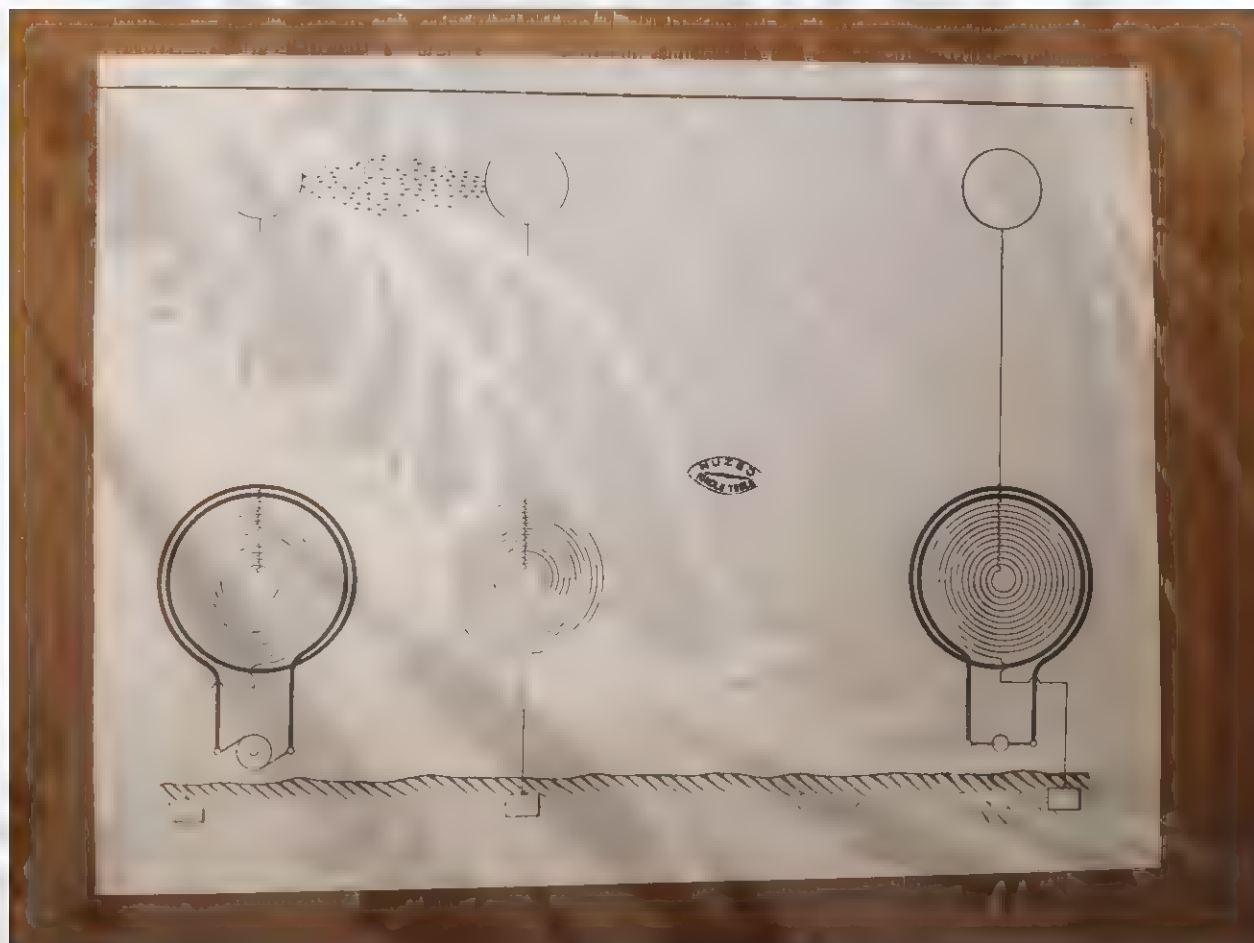
for a spark discharge bottle or shell house
2. impedance, let us suppose a ship at ground ...
with $\frac{1}{2} = \frac{2.5}{1000}$ ohms in which the current through ship will be $\frac{1000}{2.5} = 400$

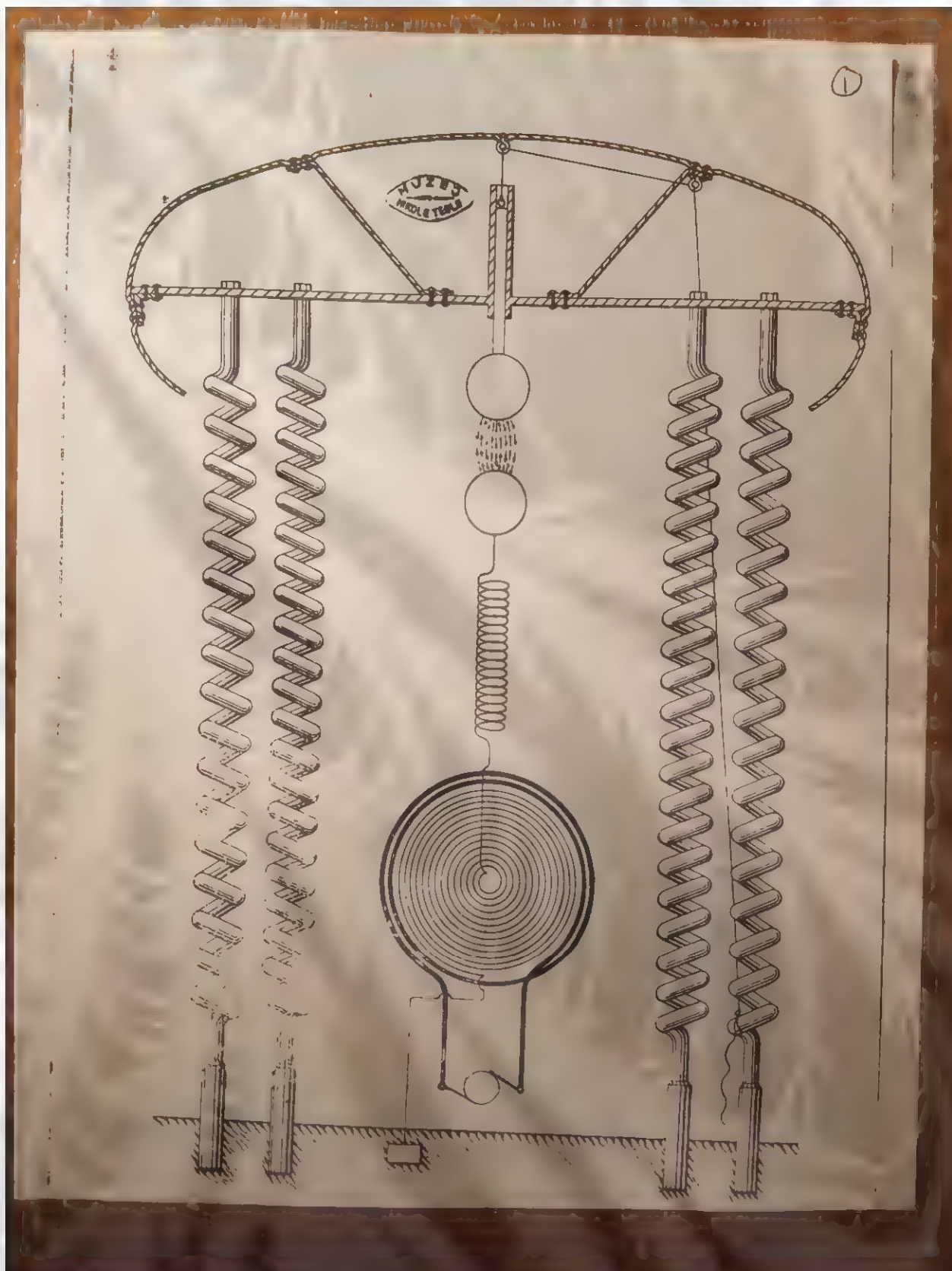
$I = \frac{E}{Z}$ Energy in ship ...
 $\frac{1000}{2.5} = 400$...
assuming mean ...
mean in ...
perfectly ...

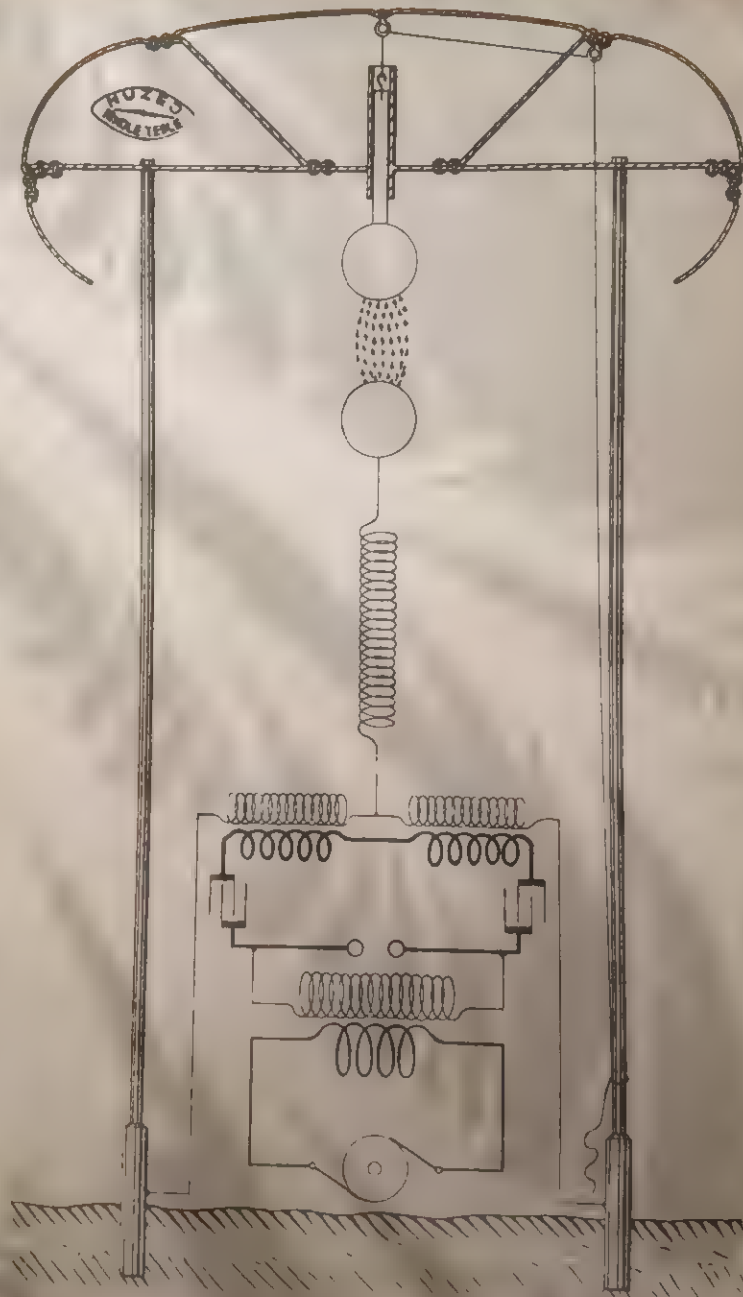
(5)

RUZED
HINGLE: 1913









used carefully. The article which contains sufficient indication to lead to a correct conclusion.

I was sorry that I was unable to see you before yesterday, as I had been

on vacation, I remain,

Yours very ~~truly~~ sincerely

Nikola

R. V. Johnson

Secretary

I am sorry that I was unable to see you before yesterday, as I had been on vacation, I remain,



The Swallow, No. 100
July 1st, 1900

My Dear Sir,

I have just received your letter of the 27th inst. and am glad to hear that you are interested in the Swallow. I am sure that you will find it a most interesting and useful publication. I am sure that you will find it a most interesting and useful publication.

I am sure that you will find it a most interesting and useful publication. I am sure that you will find it a most interesting and useful publication.

I am sure that you will find it a most interesting and useful publication. I am sure that you will find it a most interesting and useful publication.

I am sure that you will find it a most interesting and useful publication. I am sure that you will find it a most interesting and useful publication.

Yours sincerely,

J. F. Johnson

Johnson, J. F.
Editor of The Swallow
Chicago, Ill.



105 Broadway, New York,
June 18th, 1910.

My Dear Luka; -

I am glad that my friend Kohlsaat will
be glad to accept of your request. Of course, of
course, that he is now the proprietor of the paper
as well as its Editor.

I shall certainly be delighted to see
R.U.J. the second, and hope that besides the qual-
ities you name, he has also inherited some of those of
his grandfather.

Sincerely yours,

Wm. B. Ewing

W. B. Ewing, Esq., Editor,
The New York Magazine,
105 Broadway, New York.

Notes given to G H Clark by E G Gage
December 1, 1942

RE TESLA

The first time that Tesla saw a radio station--the interior, that is--was in 1910, when E. C. Gage took him on a tour through the wireless station of the Radio Tel. and Tel. Co., "MR", in the Metropolitan building, New York City.

Gage was an operator for the Radio Co. at the time, and had met Tesla several times previous to the factory of Fritz Lowenstein, who was a close friend of Gage. Gage had worked several years for Tesla, notably during the experiments at Pike's Peak.

Tesla's office was in the Metropolitan Tower, on the 24th. floor, while the Radio Tel. and Tel. Co.'s office was just above, on the 25th. Nevertheless, Tesla had never seen the station (which was in the main building, not in the tower) until the date given above.

Gage, who was by no means immune against the ladies, had been in Tesla's offices after the meeting at Lowenstein's, and at one of these times he asked Tesla's stenographer (who was far from being bad-looking) to visit the station. Tesla overheard the invitation, and at once "invited himself in". Several weeks later, the visit took place.

Tesla paid no particular attention to anything except the coupling coils. "There are my coils", he said. Further, pointing to the condensers, spark gap, etc., he said "These do not interest me; they are not mine; but those coils were my idea and they interest me greatly".

When the Radio T. and T. Co. broke up, Tesla sent for Gage, and would have given him a job, but Gage told him that a job had already been found, with the Marconi Co. Mr. Sammis of that company was going to send him as operator to the new station in the Metropolitan Tower. Gage took that job, but today his main regret is that he did not accept Tesla's offer.

Incidentally, as a sort of poor taper-off, this same year--1910---marks the date when Gage first made my acquaintance. I went to MR to measure the antenna constants for the Navy (see rough log, 1910) and met Gage there. I am glad to say that our friendship has continued unbroken down the intervening thirty two years.

G.H.Clark

Ex E G Gage

202 Metropolitan Tower,
October 13th, 1910.

My Dear Mr. Hammond;

You have probably forgotten that article I have promised and will be surprised, therefore, when I tell you that I have not abandoned it and expect to furnish it soon, if you think that it will be of any use. Will you please let me know what you think of the matter at present?

Regretting that it has been impossible for me to comply with your request at that time, I remain, with kind regards,

Yours sincerely,

J. H. Hammond, Jr.

John Hays Hammond, Jr., Esq.,
131 Grove St.,
New Haven, Ct.



THE COLUMBIAN COLLEGE
CHICAGO, ILL.

My dear Sir,

I am glad to note from the enclosed
that you are beginning to find out about you
themselves. I knew long before. I believe it was
several years before you were able to do so.

I remain,

Hoping that you are all well and happy.

Yours very sincerely,

W. E. Johnson, Editor,
Lary Magazine,
New York, N.Y.

W. E. Johnson

202 Metropolitan Tower,
November 8th, 1910.

My Dear Mr. Hammond;

I was glad to read the enclosed newspaper reports. This is water on my mill. Just go ahead and make a lot of money, then I will sue for infringement and we will divide.

Yours sincerely,

Ch. F. Felt

John Fays Hammond, Jr., Esq.,
Lockout Mill,
Gloucester, Mass.

Enclosure.

Gloucester, Mass., November 10th, 1910.

Nikola Tesla, Esq.,
202 Metropolitan Tower,
New York.

My dear Mr. Tesla:

It will be very agreeable for me to share profits with you, but
I shall only do so on the condition that you share our liabilities also.

After investigating this matter I am sure that you will take
little interest in it.

I expect to be in New York in a few days and hope to have the
pleasure of seeing you personally with regard to the article which you
have so kindly prepared for me.

The Yale faculty and undergraduates are endeavoring to get me to
use what small influence I may have to induce you to deliver a lecture at
Yale some time during the month of February. Having just graduated myself,
I know the feeling that is prevalent in New Haven and can assure you that
they would appreciate greatly having the pleasure of hearing you.

Yours sincerely,

202 Metropolitan Tower,
November 8th, 1910.

My Dear Mr. Hammond;

I was glad to read the enclosed newspaper reports. This is water on my mill. Just go ahead and make a lot of money, then I will sue for infringement and we will divide.

Yours sincerely,

Chas. F. Smith

John Pays Hammond, Jr., Esq.,
Lookout Hill,
Gloucester, Mass.

Enclosure.

202 Metropolitan Tower,
November 12th, 1910.

My Dear Mr. Hammond:

Replying to your letter of the 10th,
I am very glad to know of at least one modest inventor.
As I naturally surmise that your Papa would pay all
our liabilities, I am willing to share in these.

I shall look to the pleasure of
seeing you on your next visit to New York, when you
will have an opportunity of seeing a magnificent little
pump in my office.

Yours sincerely,

J. P. A.

John Fays Hammond, Jr., Esq.,
Lookout Hill,
Gloucester, Mass.

21
110
202 Metropolitan Tower,
November 14th, 1910.

My Dear Mr. Hammond;

Judging from the enclosed, I think that you are playing a wireless possum. Notwithstanding your assurances, I will watch your progress and bring a friendly suit for infringement as soon as I ascertain that you are in funds.

Sincerely yours,

A. T. T. T.

John Eays Hammond, Jr., Esq.,
Lockout Hill,
Gloucester, Mass.

Enclosure.

202 Metropolitan Tower,
November 21st, 1910.

My Dear Luka;

The enclosed clipping was cut out for you a long time ago but I mislaid it. It was interesting to me to read such a statement from a critic in this country. As for myself, I have always thought that Gogol towered above all other Russian novelists as Samson over the Philistines.

I understood from Mrs. Johnson that you are to dine with me on Thanksgiving Day but the time has not yet been fixed. Will you please drop me a note or phone so that there may be no misunderstanding?

With kind regards,

Yours sincerely,

R. U. Johnson

R. U. Johnson, Esq., Editor,
Century Magazine,
32 Union Square, New York.



The Painted Canoe
Anthony Winkler

Teaching

The Vacation of a Teacher
 Wayne C. Booth

NEW
BOOKS
AND

The Mahabharata
by A. D. Vyasa

1500 Rhode Island Avenue,

Washington, D. C., February 16th, 1911.

Mr. Nikola Tesla,

Metropolitan Tower, New York.

My dear Mr. Tesla:

I have just had a most interesting conference with the leading government authorities in the Wireless Department, and they seem to think that the field I am working in is a most valuable one for naval work.

As you know, I am endeavoring to develop a short-distance non-interferable system for use in fleet action. I will have a 5 K.W. sending station and a flat-top aerial 118 feet high. Only distances up to 20 miles need be covered, and transmission of 20 words per minute is the maximum requirement, written message on Morse tape preferable. These are the Government requirements. Of course the great difficulties we have to contend with are forced oscillations, and atmospheric disturbances, neither of which can be eliminated by known methods of tuning, as neither Marconi's nor Fessenden's "Interference Preventive" seems to have been successful. By using a lot of power and a sensitive detecting device, with a stiff receiving circuit having a very high inductance or a very loose coupling, I think that we can eliminate much outside interference.

On the strength of our conversation at dinner the other night, I have become much interested in your idea of our forming a joint company such as the "Tesla-Hammond Wireless Development Company." (In thinking of this name I have followed Emersonian advice, and, as you see, attached my

2.

chariot to a Star.) The purpose of this Company would be to perfect an automatic selective system, to perfect the dirigible torpedo, and eventually to carry out your magnificent projects that will wirelessly electrify the world. My own endeavor up to the present time in the development of some practical dirigible torpedo apparatus will not be valueless, and my imagination has made me a believer and a devotee in the art of which you are the High Priest -- "Telautomatics." It is on these considerations that I think that a little, unpretentious company should be organized which may further the seeds of great possibilities.

On my return to New York I will call and see you and show you my idea for a selective system. If this idea of a small company to protect and develop our wireless patents appeals to you in the broad outline I have given you, do drop me a line here, and after having your consent I will communicate with my brother Harrie and describe to him our plan.

Hoping that I am not monopolizing too much of your valuable time,

I am most sincerely yours,



202 Metropolitan Tower,
January 6th, 1911.

Walter H. Bunnell, Esq.,
76 Williams St., New York.

My Dear Sir;

Enclosed please find \$40. to apply
against the Duffner claim.

I was very pleased to receive New
Year greetings from him, from which I drew rather
a favorable inference.

In a short time I am expecting to
settle this matter in full.

Yours very truly,

Ch. Parker

Enclosure.



202 Metropolitan Tower,
December 30th, 1911.

Dear Mr. Duffner;

Although you have given me considerable trouble I cannot permit this trifle to interfere with my wishing you a Happy New Year in response to your Christmas greetings. Your card indicates prosperity and if I am not mistaken in my surmise I would recommend that you send a big fat check to relieve me in my present situation.

Yours very truly,

W. J. Duffner

C. J. Duffner, Esq.,
Portsmouth, N. H.

WALTER L. BUNNELL,
ATTORNEY AND COUNSELLOR AT LAW

TELEPHONE 5338 JOHN

CABLE ADDRESS WALBUN

55 JOHN STREET

NEW YORK, February 17/12

#111

Mr. Carl J. Duffner,
Watertown
South Dakota.

Dear Sir:-

Yesterday Mr. Tesla sent me another installment of \$40.00 and I am enclosing herewith my check to your order for \$30.00 of it.

Inasmuch as the debtor has now reduced his indebtedness to less than \$100.00, and aside from the fact that you requested it of me in a letter of a couple of months ago, I have made up a complete statement of the entire account and am enclosing the same herewith.

You will see from this statement that I have already collected from the debtor the sum of \$1105.00, and that of that sum I have sent you, in all, \$775.00; this leaves a balance still due to you of \$29.53 and such interest on that sum as may hereafter accrue; you will also see that, in order to make me whole, I should receive a further sum of \$42.31, and that the balance still due from the debtor is \$71.84, or the sum of these two amounts.

In computing the interest, I have used the method sanctioned by our Courts of computing the interest on the whole amount due from the due date to the date of first payment, adding same to the principal sum and then deducting the amount of the payment, the result being a new principal on which to compute interest, and then pursuing this method as the payments are made. The total amount of interest charges as thus computed is \$144.88, but inasmuch as this computation included the costs of the suit, the interest on these costs should be deducted, and doing so leaves the balance of the interest as stated, \$129.91. You will also note that I have credited you with the \$13.20 which you paid for the exemplified copy of the Judgment Roll in the Colorado action, and your interest includes the interest on that sum just the same as though it were a part of the principal.

In the beginning you sent me \$10.00 to cover disbursements but inasmuch as it actually cost me \$11.00 to secure service of a paper on Tesla, and which sum I could not make him pay to me, I have not taken that amount into consideration whatever, and we will consider it as cancelled by a set off.

Please let me know whether these figures are in accordance with yours? I expect to receive the balance of the amount due in a short time and I will then account to you further.

Yours very truly,

Walter L. Bunnell

New York, February 17/1912 190

M. Carl J. Duffner,

WALTER L. BENNETT Esq.

ATTORNEY & COUNSELLOR AT LAW,

10 John Street, ~~NEW YORK CITY~~

1908

Jan'y 1. To the amount of your claim against Tesla
with all accrued interest to date, 911 42
To amount paid by you for exemplified copy
of your judgment against him, 13 20
To all accrued interest on these two sums
taken together, to date, 129 91
Total sum due, \$1054 53
To amount of my charges, as agreed, 250 00
To total amount due you at this time, \$ 804 53
To total amount already paid to you, as
follows:-

Statement of December 22nd. 1909	\$320.00	
1910, February 3rd.,	20.00	
March 5th.,	20.00	
April 27th.,	30.00	
July 2nd.,	25.00	
July 29th.,	20.00	
Sept. 10th.,	25.00	
Nov. 3rd.,	30.00	
1911 Jan'y 5th.,	30.00	
March 4th.,	30.00	
April 29th.,	25.00	
July 8th.,	20.00	
Sept. 13th.,	30.00	
Nov. 11th.,	40.00	
Dec. 13th.,	30.00	
1912 Feb'y 17th.,	30.00	775 00
Balance still due you,		\$ 29 53

STATEMENT OF MY CHARGES AND COSTS

To my charges as agreed,	\$250.00	
To costs of suit,	107.34	
To accrued interest on these costs	14.97	
Total charges,	\$372.31	
To sum retained by me thus far,	330.00	
Balance still due to me	\$ 42.31	42 31
To balance still due from debtor,		\$ 71 84

11000
1000

125-43

4/24 - 2000
48 hrs. 1000
in 1000

202 Metropolitan Tower,
February 18th, 1911.

My Dear Mr. Hammond;

I was glad to receive your letter of the 16th and to know that the Government officials are waking up to the importance of your efforts. The exposition of your selective system is looked to with great interest. It would just break my heart if it should turn out that my own selective system is better than yours, notwithstanding the fact that I know it would make you happy for I have discerned that you are a gallant fellow.

The Tesla-Hammond combination looks good to me but we should have to go at it with some circumspection. I have already interested a gentleman who signs himself J.P.H. in a part of my wireless inventions and my friend Astor is now waiting for the completion of my plant to go into the wireless power transmission business which should be a colossal success. In the art of Telautomatics, however, I am perfectly free and would be glad to go into any fair proposition to exploit the field. I think that in a few years this departure will command the attention of the world.

I have just completed my turbines and am starting Monday to install them at the Edison plant where I expect to show them to you in operation on your next visit to the city.

With kind regards,

Very sincerely yours,

N. Tesla

Wireless Control of Machinery Is Solved

Professor Branly Said to Have Per-
fected System of "Telemechanics"
Operative at 150 Miles.

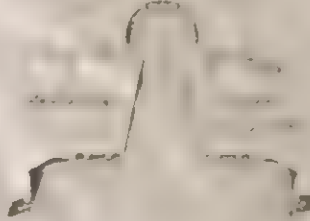
Pars, Feb. 18.—Professor Branly, who has just been elected to the Academy of Sciences, scoring over Madame Curie by the narrow margin of two votes, has, it seems, some remarkable schemes on foot as regards telemechanics, or the operation of machinery at a distance by wireless electricity.

The professor has not made any statement yet, but it appears that he has reached some conclusions which may solve the problem. One of them is to prevent the operations from being interfered with by electric storms. If his theory is ever applied to practice, it will be possible, apparently, to direct all the operations of a fort some one hundred and fifty miles away in time of war.

An operator from the Eiffel Tower would thus be able to discharge batteries or machine guns, and—what is more remarkable—by a peculiar series of reflected waves, he would be able to observe the effects of each discharge.

The practical field of this discovery would be immense. Engines could be set in motion at a distance, the working of machinery could not only be started and " " " " but could also be regulated and observed, by the distant operator.

Engines could be started in lighthouses at a distance, and important operations conducted in mines without risking the lives of workmen or operators.



TELEMECHANICAL SYSTEM
LONG ISLAND N.Y.

302 Metropolitan Tower,
February 21st, 1911.

My Dear Mr. Harbord;

The enclosed will interest you.
If we do not hurry up we may have nothing
but stunted milk left.

Yours sincerely,

John Hays Hammond, Jr.

John Hays Hammond, Jr., Esq.,
1500 Rhode Island Avenue,
Washington, D.C.

The closure.

Wireless Control of Machinery Is Solved

Professor Branly Said to Have Per-
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Operative at 150 Miles.

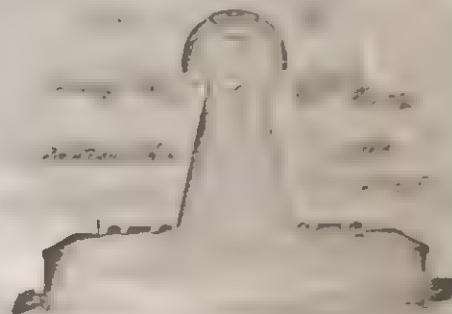
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lamps could be set in motion at a distance, and important operations conducted in mines without risking the lives of workmen or operators.



LONG ISLAND N.Y.

302 Metropolitan Tower
February 21st, 1911.

My Dear Mr. Harwood:

The enclosed will find
If we do not hurry up we may have no
but skimmed milk left.

Yours sincerely,



THE LIBRARY OF CONGRESS

WASHINGTON, D.C. 20540

MANUSCRIPT DIVISION

June 4, 1990

Dear Mr. Anderson:

In response to your letter of May 14, we are enclosing a complimentary copy of the Sunday American of February 21, 1911, to John Hays Hammond, as well as a copy of the newspaper clipping that accompanied that letter. The citation for the clipping is the Sunday American of February 19, 1911. These items are found in container 18 of the Manuscript Division's collection of the papers of John Hays Hammond.

Sincerely yours,

James H. Hutson

James H. Hutson
Chief

Enclosure

Mr. Leland I. Anderson
2525 South Meade Street
Denver, CO 80219

Wireless Control of Machinery Is Solved

Professor Branly Said to Have Per-
fected System of "Telemechanics"
Operative at 150 Miles.

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The practical field of this discovery would be immense. Engines could be set in motion at a distance, the working of machinery could not only be started and maintained, but could also be regulated and observed by the distant operator.

My Dear Mr. Hamr

Wireless Control of Machinery Is Solved

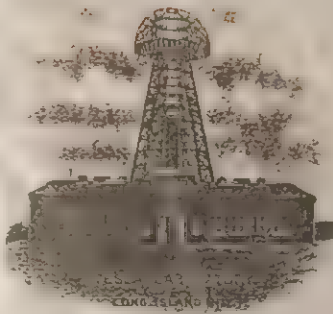
Professor Branly Said to Have Perfected System of "Telemechanics" Operative at 150 Miles.

Paris, Feb. 15. Professor Branly, who has just been elected to the Academy of Science, scoring over Madame Curie by the narrow margin of two votes, has, it seems, some remarkable schemes on foot as regards telemechanics or the operation of machinery at a distance by wireless electricity.

The professor has not made any statement yet, but it appears that he has reached some conclusions which may solve the problem. One of them is to prevent the operations from being interfered with by electric storms. If his theory is ever applied to practice, it will be possible, apparently to direct all the operations of a fort some one hundred and fifty miles away in time of war.

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The practical field of this discovery would be immense. Engines could be set in motion at a distance, the working of machinery could not only be started and maintained, but could also be regulated and observed, by the distant operator.



The Metropolitan Tower,
February 21st, 1911.

My Dear Mr. Hammond;

The enclosed will interest you.
If we do not hurry up we may have nothing
but skimmed milk left.

Yours sincerely,

H. T. Taylor

John Hays Hammond, Jr., Esq.,
1500 Rhode Island Avenue,
Washington, D.C.

Enclosure.

RECORDED IN THE OFFICES OF THE MANUSCRIPT DIVISION, LIBRARY OF CONGRESS

Wheeler Co. Is Sub

Professor Dr. J. J. ...
 System of 'Telemechanics'
 Operative at 150 Miles

Feb. 16.—Professor H. J. ...
 but just ... in the Academy of ...
 ... over 150 miles ... by ...
 ... of two ... has ...
 ... on foot ...
 ... of the ...
 ... at a distance by wire-
 less ...

The professor has not made any state-
 ment ... that he has
 ... which may
 ... of them is to
 ... from being inter-
 ... storms. It is
 ... to produce, it will
 ... the
 ... directed the
 ... some one hundred
 ... in time of war.

An operator from the ... Tower
 would ... discharge ...
 ... what is more re-
 ... of re-
 ... water, ... to ob-
 ... of each discharge.

The practical field of this discovery
 would be ... to detect
 ... at a distance the working of
 ... could ... be regulated
 ... but could ... be regulated
 ... by the distant operator.

202 Metropolitan Tower,
 February 21st, 1911.

My Dear Mr. Hammond:

The enclosed will interest you.
 If we do not hurry up we may have nothing
 but skimmed milk left.

Yours sincerely,

John Hays Hammond, Jr.

John Hays Hammond, Jr., Esq.,
 1500 Rhode Island Avenue,
 Washington, D.C.

Enclosure.

December 30, 1911.

Nikola Tesla, Esq.,
1 Madison Ave.,
New York City.

Dear Mr. Tesla:

I hope you will forgive me the liberty of troubling you at this time when I know it is so taken up with business matters. I have, however, been receiving numerous notes from one of the editors of the Scientific American, with whom I am personally acquainted, who is desirous of having a few minutes' conversation with you relating to the Turbine. He is writing for some of the important magazines a series of articles on "Prime Movers" and I think that it would be desirable from the advertising standpoint to have our turbine included in the article. If you can spare him a few minutes of your time he would put in statements of greater interest and accuracy than if he has to surmise about the advantages of your invention.

This gentleman's name is Mr. Waldemar Kaempffert, of the Scientific American, 361 Broadway. He will be glad to see you for a few minutes any time at your convenience. I will greatly appreciate any kindness that you can show him.

I called you up yesterday in regard to procuring a few photographs of your dirigible boat of 1899. I have been asked to write an article describing my apparatus, but, considering that it would be egotistical to mention my own work and not the achievements of others, I have decided to write an article which deals as comprehensively as possible with the work of all the other inventors in this art. Your own pioneer experiments would constitute a first chapter in the history of telautomatics, and any data or photographs of these experiments would enable me to treat them with the scope which they

(#2—W. T.)

demand.

Again asking your forgiveness for the trouble to which I am putting
you, believe me

Yours sincerely,

JWH, Jr./LB

202 Metropolitan Tower,
January 1st, 1912.

My Dear Mr. Hammond;

Your letter of December 30th
has just reached me.

While I am rather in favor of
keeping low for the time being as regards the
turbine, I shall be pleased to see Mr. Kaempffert
of whom I know as an able correspondent, having
read numerous articles from his pen.

In reference to my dirigible
boats of 1898 and 1899 I have photographs some-
where and if I can dig up one or two, you can
have them. In attempting to write an imperson-
al article you are showing good judgement. Give
all the credit to others and take none for your-
self and you will feel better for it afterwards.

With best wishes for a Happy
New Year, believe me,

Yours sincerely,

H. Tash

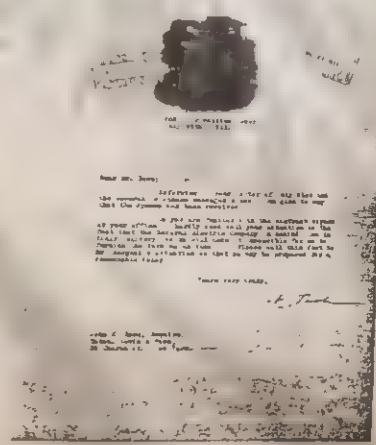
John Hays Hammond, Jr., Esq.,
71 Broadway, New York.

Q BOX 1583
OCA RATON FL
33429-0494

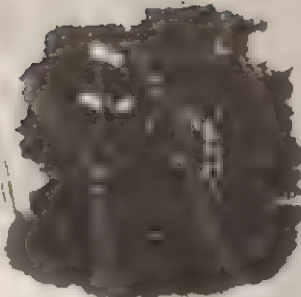
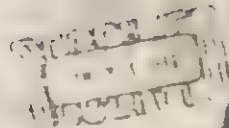
SCARCE TLS BY NIKOLA TESLA

108

TESLA, NIKOLA (1856 - 1943). Croatian-born American electronics engineer and inventor. TLS. 8 1/2" x 11". 1p. Long Island. July 29, 1911. Interesting business letter on outstanding Tesla Laboratory letterhead depicting the lab's facilities on Long Island. In the letter, Tesla makes reference to a dynamo's being received, and General Electric's being behind in delivery of some equipment. "Dear Mr. Rowe; Referring to your letter . . . I am glad to say that the dynamo has been received. As you are familiar with the contract signed at your office, I hardly need call your attention to the fact that the General Electric Company is behind time in their delivery, which will make it impossible for me to furnish the turbine on time. Please call this fact to Mr. Sargent's attention so that he may be prepared for a reasonable delay. Yours very truly, N. Tesla." Arriving in the U.S. in 1884, Tesla was, for a short time, associated with Thomas Edison, until he left to devote his time to his own research projects for which he founded the Tesla Laboratory in New York. Tesla is best known for his invention, in 1888, of the alternating-current induction motor, on whose development advocates of alternating current had been working unsuccessfully for years. He was also responsible for many advances in the fields of high voltage and frequency apparatus. Among the items he developed were the Tesla coil, a system of arc lighting, a system of wireless transmission and a generator for high frequency currents. Date of receipt stamped twice in purple at top of page, one stamp immediately adjacent to the lab vignette. Tesla's signature is fresh and clean. Excellent. \$1,250.00



3101



108 Metropolitan Tower,
July 29th, 1911.

Dear Mr. Lane:

Referring to your letter of July 21st and
the several telephone messages since, I am glad to say
that the dynamo has been received.

As you are familiar with the contract signed
at your office, I hardly need call your attention to the
fact that the General Electric Company is behind time in
their delivery, which will make it impossible for me to
furnish the turbine on time. Please call this fact to
Mr. Sargent's attention so that he may be prepared for a
reasonable delay.

Yours very truly,

W. T. Tash

John C. Lane, Inquire,
Shaw, Lewis & Foss,
30 Church St., New York

Jan. 22, 1912.

Mr. Nikola Tesla,

206 Metrop Altan Tower,

New York, N. Y.

Dear Sir:-

Under date of Nov. 12th you wrote us to the effect that the personal sketch previously sent by us for revision had not been received, and asked us to send the sketch again. This we did on Nov. 18th but have nothing further from you in regard to the matter. We, therefore, enclose the sketch again and will be greatly obliged to you if you will look it over and return with as little delay as possible, as we are now arranging our forms for the press.

Hoping to hear from you by return of mail, we are,

Very truly yours,

A. N. Marquis & Company.

N/NK

The following is produced from notes taken during an evening dinner at the Roosevelt Hotel in New York, March 24, 1955, with Muriel Arbus and Dorothy F. Skerritt.

We all met shortly after 5:30p in the lobby of the Roosevelt Hotel and then proceeded to the Coffee House in the hotel for dinner.

Dorothy Skerritt related that she secured her secretarial position with Tesla in 1912. M.S.J. had been his secretary up to this time, but this girl was somewhat overweight and did not have (or was not able to muster) the snappy ability which he demanded of those around him. It was discovered that M.S.J. overstated the charges on the articles of apparel which he instructed her to purchase for him. Not being too agile, she accidentally knocked over a small table in the office which crashed to the floor one particularly distressing day, clinching on the spot Tesla's decision to discharge her. The office messenger boys related to Miss Skerritt how she pleaded on bended knee to Tesla to retain her, but Tesla was too disturbed to consider it and ordered her out.

Following Miss Skerritt's interview with Tesla, she met one of the messenger boys who said, "You'll get the job."

"Why?" asked Miss Skerritt.

"Because you're thin and the other girl was clumsy," was the blunt reply.

"Those messenger boys can tell you a lot of information if you'll listen to them," remarked Miss Skerritt... "Yes, I should say so!" agreed Miss Arbus.

In a conversation with George Scherff (Jr.) earlier that afternoon, he related that his father, through the years, had assisted Tesla financially

(for hotel expenses, etc.) in a total amount of about \$10,000. I could tell, by the way Mr. Scherff expressed it, that there was some bitterness over the matter and guessed that it must have been a critical subject of family dissension. Miss Skerritt verified that Mr. Scherff gave Tesla this level of money, and said that "Tesla seemed to have Mr. Scherff hypnotized." Scherff would pay frequent visits to Tesla at his office at 8 W. 40th Street.

Paul Radosavljevich was a good friend of Tesla. "Wasn't he a prince of a fellow though," exclaimed Miss Skerritt.

"Whenever Bernard Behrend called on Tesla I had the most difficult time understanding him because of his Bostonian accent -- I just couldn't understand the man!"

There was a matter about which Fritz Lowenstein succeeded in making considerable profit at the expense of Tesla's radio inventions. Tesla drew Miss Skerritt close and whispered, as he always did when he had something important to say, "Miss -- Never trust a Jew! -- Never trust a Jew!"

"When Morgan Sr. was living, Tesla could get money from him just by asking for it. One day, he told me, 'I was walking down Wall Street and happened to see Mr. Morgan in his office through the second floor window. So, I went in and asked to see Mr. Morgan, and immediately I was ushered into his office. Mr. Morgan asked if he could write out a check for me and called for the boy to bring his book. Morgan signed a blank check and asked me to fill in the amount I needed -- it was \$30,000.'"

"I went down to see Mr. Morgan several times to get money for Tesla," related Miss Skerritt. "The first time I remember I was surprised that Mr. Morgan came out himself personally to see me when the note was given to him asking for money. He would also call for the money and hand it to me without any questions."

L. Anderson

L Anderson

LONG ISLAND N.Y.
202 Metropolitan Tower
May 22, 1912

John Hays Hammond, Jr., Esq.,
71 Broadway,
New York, N. Y.

Dear Mr. Hammond:

Thanks for your kind letter and article received which shows that you have done a great deal of work in the wireless field.

Not with the intention to criticise but merely to apprise you of facts, I would call to your attention that I have anticipated Thomson in the singing arc, as well as Poulsen in the silent arc giving undamped oscillations. I was also the first to bring out high frequency alternators and to use them. There is, therefore, little merit in Fessenden's effort in that direction. You will be surprised when I tell you that great many people have ridiculed me for proposing the employment of alternators in wireless at all.

As to Marconi's latest apparatus, it is in every important particular my own and now, since it is recognized that Hertzian waves are simply a loss and ineffective in transmissions at considerable distance, the frequencies I have advocated have also been settled upon. Not a suggestion of Hertzian methods and apparatus remains, my system having been universally adopted. Furthermore, incredible as it seems, no plant has as yet been produced to equal my performances in Colorado even in a remote degree, notwithstanding the fact that years have passed since.

Understanding that you are sailing within a day or two, I write to wish you a happy journey.

With regards, believe me,

Very truly yours,

W. T. G.

May 20, 1912.

Nikola Tesla, Esq.,
1 Madison Avenue,
New York City.

My dear Mr. Tesla:-

I am taking the liberty of sending you a short article which I have written for popular consumption, and in which I have mentioned some of your valuable work in the art.

Hoping that this will find you in the best of health, and with encouraging reports from the turbine, believe me,

Very truly yours,

Enc.

Mr. Chairman, Mr. Speaker,
Dear Members of the House:

My dear Sirs:

I thank you very much for the invitation to appear before the House of Representatives on this important occasion. I am very glad to have the opportunity to present to you my views on the subject of the proposed amendment.

I am sure that a thoughtful and careful study of the proposed amendment will lead to a decision in favor of its adoption.

We have not forgotten the importance of the proposed amendment, and we are sure that it will be adopted. We are sure that it will be adopted.

Very respectfully,
J. C. [Signature]

J. C. [Signature], Sec'y.
Century Magazine,
New York, New York.



New York, N. Y., December 6, 1912

My dear Luka:

I am returning under enclosure your admirable poem as well as excerpt of your eloquent address before the School of Journalism. Luka Filipov did not show me much courage as you did in writing those verses about Panama.

I have received your book and in this connection I would like to make a suggestion. Could you not write a little poem on Montenegro which would add much to the value of the gift with which you intend to honor the King.

Thanks for your mention of my letter about Iasarovich. But just wait until somebody attacks you. I shall show you how I can write.

Yours sincerely,

R. U. Johnson, Esq.,
Century Magazine,
Union Square, New York

A handwritten signature in dark ink, appearing to read 'R. U. Johnson', written in a cursive style.

Will you please read the stories of
Emil Zola which I am forwarding and which are
now appearing in a German paper for the first time.
You may find them interesting enough to see. I am
most obliged to you for returning the copies at your earliest
convenience.

I wish to mention that I am sorry to
hear of the death of the talented and kind
friend, Mr. Zola. Your letter of January 1st has
been received. There is so much to say about it it would be preferable
to discuss the matter.

Hoping that you have enjoyed the evening,
I remain as ever,

Yours sincerely,

Tesla's Wardencliff stationery
taken on an ethereality
character.

202 Metropolitan Tower
February 16, 1913

John Mays Hammond, Jr., Esq.,
71 Broadway,
New York, N. Y.

Dear Mr. Hammond:

I have had several conversations with my friend, F. U. Johnson, Editor of the Century, in regard to your recent experiments in telautomatics and have recommended to him to ask you to write an article for that magazine.

This would be an excellent opportunity and I think that you should avail yourself of the same.

Yours very truly,

W. H. P.

February 19, 1913.

Dear Mr. Tesla:-

I wish to express to you my deep appreciation of your kind recommendation of me to Mr. Robert Underwood Johnson.

It is needless to say that I feel particularly honored by your endorsement, having in mind, not only your scientific prominence, but also your unquestionable literary attainments.

Sincerely yours,

Nikola Tesla, Esq..

Metropolitan Tower,

New York City, N. Y.

29th Nov. 1900. Riche

60 thousand lbs

James L. May Jr.

Test Number	20437	20438
Specimen	1	2
Length, in Inches	8.00	8.00
Width, in Inches	1.018	1.012
Thickness, in Inches	.073	.072
Weight, in Pounds	.0743	.0729
Yield Point, lbs per sq. in.	255	230
Tensile Strength, lbs per sq. in.	245	202
Elongation, %	22.6	26.4
Reduction of Area, %	5	-
Modulus of Elasticity, lbs per sq. in.	27	57
Modulus of Rupture, lbs per sq. in.	254.9	16653
Compressive Strength, lbs per sq. in.	2700	-
Modulus of Fracture	28700	228460
Direction of Fracture	1/2" inside gauge	1/2" gauge mark
	Silky	Silky

... for a ... making load

Columbia University
the City of New York

ENGINEERING DEPARTMENT
TENSION LABORATORY

REPORT OF TENSION TESTS

Made for *May 11, 1913 -*
N. Tesin, Esq.
202 Metropolitan Tower,
New York City

			Modulus of Elasticity		
37	38	39	Unit Load	Specimen #6 Unit deformation	Modulus
1 E	5 =	6 =			
800	800	800	111.75	0.001	28,400,000
1800	1800	1800	223.50	0.002	28,400,000
2800	2800	2800	335.25	0.003	28,400,000
3800	3800	3800	447.00	0.004	28,400,000
4800	4800	4800	558.75	0.005	28,400,000
5800	5800	5800	670.50	0.006	28,400,000
6800	6800	6800	782.25	0.007	28,400,000
7800	7800	7800	894.00	0.008	28,400,000
8800	8800	8800	1005.75	0.009	28,400,000
9800	9800	9800	1117.50	0.010	28,400,000
10800	10800	10800	1229.25	0.011	28,400,000
11800	11800	11800	1341.00	0.012	28,400,000
12800	12800	12800	1452.75	0.013	28,400,000
13800	13800	13800	1564.50	0.014	28,400,000
14800	14800	14800	1676.25	0.015	28,400,000
15800	15800	15800	1788.00	0.016	28,400,000
16800	16800	16800	1899.75	0.017	28,400,000
17800	17800	17800	2011.50	0.018	28,400,000
18800	18800	18800	2123.25	0.019	28,400,000
19800	19800	19800	2235.00	0.020	28,400,000
20800	20800	20800	2346.75	0.021	28,400,000
21800	21800	21800	2458.50	0.022	28,400,000
22800	22800	22800	2570.25	0.023	28,400,000
23800	23800	23800	2682.00	0.024	28,400,000
24800	24800	24800	2793.75	0.025	28,400,000
25800	25800	25800	2905.50	0.026	28,400,000
26800	26800	26800	3017.25	0.027	28,400,000
27800	27800	27800	3129.00	0.028	28,400,000
28800	28800	28800	3240.75	0.029	28,400,000
29800	29800	29800	3352.50	0.030	28,400,000
30800	30800	30800	3464.25	0.031	28,400,000
31800	31800	31800	3576.00	0.032	28,400,000
32800	32800	32800	3687.75	0.033	28,400,000
33800	33800	33800	3799.50	0.034	28,400,000
34800	34800	34800	3911.25	0.035	28,400,000
35800	35800	35800	4023.00	0.036	28,400,000
36800	36800	36800	4134.75	0.037	28,400,000
37800	37800	37800	4246.50	0.038	28,400,000
38800	38800	38800	4358.25	0.039	28,400,000
39800	39800	39800	4470.00	0.040	28,400,000
40800	40800	40800	4581.75	0.041	28,400,000
41800	41800	41800	4693.50	0.042	28,400,000
42800	42800	42800	4805.25	0.043	28,400,000
43800	43800	43800	4917.00	0.044	28,400,000
44800	44800	44800	5028.75	0.045	28,400,000
45800	45800	45800	5140.50	0.046	28,400,000
46800	46800	46800	5252.25	0.047	28,400,000
47800	47800	47800	5364.00	0.048	28,400,000
48800	48800	48800	5475.75	0.049	28,400,000
49800	49800	49800	5587.50	0.050	28,400,000
50800	50800	50800	5699.25	0.051	28,400,000
51800	51800	51800	5811.00	0.052	28,400,000
52800	52800	52800	5922.75	0.053	28,400,000
53800	53800	53800	6034.50	0.054	28,400,000
54800	54800	54800	6146.25	0.055	28,400,000
55800	55800	55800	6258.00	0.056	28,400,000
56800	56800	56800	6369.75	0.057	28,400,000
57800	57800	57800	6481.50	0.058	28,400,000
58800	58800	58800	6593.25	0.059	28,400,000
59800	59800	59800	6705.00	0.060	28,400,000
60800	60800	60800	6816.75	0.061	28,400,000
61800	61800	61800	6928.50	0.062	28,400,000
62800	62800	62800	7040.25	0.063	28,400,000
63800	63800	63800	7152.00	0.064	28,400,000
64800	64800	64800	7263.75	0.065	28,400,000
65800	65800	65800	7375.50	0.066	28,400,000
66800	66800	66800	7487.25	0.067	28,400,000
67800	67800	67800	7599.00	0.068	28,400,000
68800	68800	68800	7710.75	0.069	28,400,000
69800	69800	69800	7822.50	0.070	28,400,000
70800	70800	70800	7934.25	0.071	28,400,000
71800	71800	71800	8046.00	0.072	28,400,000
72800	72800	72800	8157.75	0.073	28,400,000
73800	73800	73800	8269.50	0.074	28,400,000
74800	74800	74800	8381.25	0.075	28,400,000
75800	75800	75800	8493.00	0.076	28,400,000
76800	76800	76800	8604.75	0.077	28,400,000
77800	77800	77800	8716.50	0.078	28,400,000
78800	78800	78800	8828.25	0.079	28,400,000
79800	79800	79800	8940.00	0.080	28,400,000
80800	80800	80800	9051.75	0.081	28,400,000
81800	81800	81800	9163.50	0.082	28,400,000
82800	82800	82800	9275.25	0.083	28,400,000
83800	83800	83800	9387.00	0.084	28,400,000
84800	84800	84800	9498.75	0.085	28,400,000
85800	85800	85800	9610.50	0.086	28,400,000
86800	86800	86800	9722.25	0.087	28,400,000
87800	87800	87800	9834.00	0.088	28,400,000
88800	88800	88800	9945.75	0.089	28,400,000
89800	89800	89800	10057.50	0.090	28,400,000
90800	90800	90800	10169.25	0.091	28,400,000
91800	91800	91800	10281.00	0.092	28,400,000
92800	92800	92800	10392.75	0.093	28,400,000
93800	93800	93800	10504.50	0.094	28,400,000
94800	94800	94800	10616.25	0.095	28,400,000
95800	95800	95800	10728.00	0.096	28,400,000
96800	96800	96800	10839.75	0.097	28,400,000
97800	97800	97800	10951.50	0.098	28,400,000
98800	98800	98800	11063.25	0.099	28,400,000
99800	99800	99800	11175.00	0.100	28,400,000

Average Modulus 28,400,000

60,000 lbs

Test within 10 lbs, and other results exact.

1913
14000

HAMMOND RADIO CONTROLLED BOAT SUCCESSFUL.

Army and navy experts have reported the device of John Hays Hammond, Jr., for radio control of surface craft to be sent laden with explosives against enemy ships, a success, and predict similar results with submerged craft.

Secretary Baker wrote the House appropriation committee recently that the joint army and navy board was "convinced of the practicability of the control" of the surface craft, and added that there had also been demonstrations of the possibility of the control to a craft, completely submerged, except for an air in-take pipe.

Before finally deciding on the purchase of the patents for \$750,000 the board desires further experiment with the submerged craft.

Construction of the submerged craft, which will be about 80 feet long by 7 feet in diameter, will take two years, according to Mr. Hammond, who told the committee, he had spent ten years and \$400,000 on his invention.

"The board considered the ability of the enemy to interfere with the control of the vessel by radio energy. Mr. Hammond's claims are that no interference can be had with the craft outside a radius of 100 to 150 yards from the source of the energy; that is, from the radio plant of a battleship, for example."

Major-General F. W. Coe said he had run the craft "all around vessels coming into the harbor at will." Mr. Hammond said an aviator after four hours' training on control, was able from a height of 9,000 feet and a distance of six or seven miles to exercise absolute control over the high-speed boat.

February 19, 1914.

Nikola Tesla, Esq.,

1 Madison Avenue,

New York City.

My dear Mr. Tesla:-

I am enclosing under separate cover a popular article regarding my work, published in McClure's for March.

I wish to state that I feel rather badly about the treatment given me by the Editorial Department of McClure's. I laid particular emphasis on the fact that I wished to give due credit to other inventors along this line of work.

You have probably received many newspaper clippings relative to my work and mentioning your name. A picture of your telautomaton was to be published with this article, with reference which I made of your being the pioneer in this work in the United States. However, this matter and a number of other important modifications made by me were quite ignored by McClure's, and the whole thing rushed feverishly into print.

I am

Yours sincerely,

Thanking

July

MEADOWCROFT

Grover

June 22 1914.

Dear Mr. Edison,

Permit me to extend to you and your family my hearty and respectful congratulations. I hope sincerely that the marriage of your charming daughter will prove the beginning of a new life of undisturbed happiness.

Trusting that you are carrying on your valuable work in the full enjoyment of mental and bodily vigor I remain as ever

Yours faithfully

N. Tesla

The Waldorf-Astoria
New York.

April 27. 1915.

Rev. Frederic R. Marvin

537 Northern Avenue

Albany
N. Y.

Reverend Sir,

Replying to your fav.
of 24th inst. I should say
that death by Electricity must
be absolutely painless, provided
that the apparatus is devised

and the electric force applied
by a skilled expert. The
cessation of the life process
takes place in an interval of
time so short that conscious
feeling is out of the question.

But if the work is not competently
done the unfortunate individual
may be made to endure frightful
pain.

Respectfully yours

Nikola Tesla



8 West 11th Street
New York, N. Y.
September 19, 1915


Benjamin F. Messner, Esq.,
Purdue University,
Lafayette, Indiana

My dear Sir:

Your favor of September 24th has been received in due course and has interested me in view of your forthcoming book on "Radio Dynamics". Some time ago my friend, Charles E. Speirs of the D. Van Nostrand Company, told me that you were engaged in its preparation and I commended it for publication as very little has been written on the subject. Personally, I believe that the name is not the very best as it conveys the idea that radiations are, if not motive, at least the controlling agent, while, as a matter of fact, such is not the case.

I am naturally greatly absorbed in this field of invention which has been barely touched and which I look upon as extremely promising. In an article in the Century Magazine, copy of which I am forwarding to you, I have related the circumstances which led me to develop the idea of a self-propelled automaton. My experiments were begun sometime in '92 and from that period, on, until '95, in my Laboratory at 35 South Fifth Avenue, I exhibited a number of contrivances and perfected plans for several complete telautomata. After the destruction of my Laboratory by fire in '95, there was an interruption in these labors which, however, were resumed in '96 in my new Laboratory at 46 East Houston Street where I made more striking demonstrations, in many instances actually transmitting the whole motive energy to the devices instead of simply controlling the same from distance. In '97 I began the construction of a complete automaton in the form of a boat, which is described

10-15, 1915



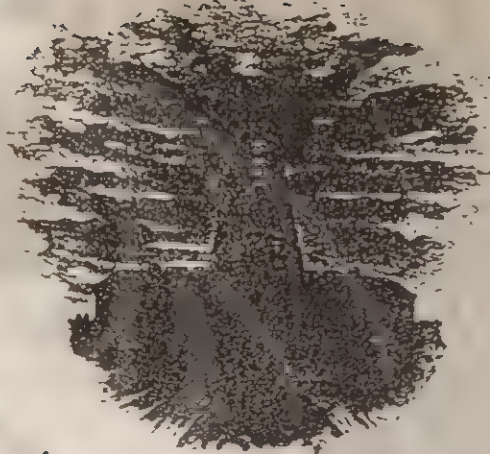
Benjamin F. Messner, Esq.

-2-

in my original patent specification #613,809. A copy of this, also, is being forwarded under separate cover. This application was written during that year but the filing was delayed until July of the following year, long before which date the machine had been often exhibited to visitors who never ceased to wonder at the performances. The drawings of this specification were made from this machine to scale. In that year I also constructed a larger boat which I exhibited, among other things, in Chicago during a lecture before the Commercial Club. In this lecture I treated the whole field broadly, not limiting myself to mechanisms controlled from distance but to machines possessed of their own intelligence. Since that time I have advanced greatly in the evolution of the invention and think that the time is not distant when I shall show an automaton which, left to itself, will act as though possessed of reason and without any wilful control from the outside. Whatever be the practical possibilities of such an achievement, it will mark the beginning of a new epoch in mechanics.

I would call your attention to the fact that while my specification, above mentioned, shows the automatic mechanism as controlled through a simple tuned circuit, I have used individualized control; that is, one based on the co-operation of several circuits of different periods of vibration, a principle which I had already developed at that time and which was subsequently described in my patents #723,186 and 723,189 of March, 1903. The machine was in this form when I made demonstrations with it in 1898 before the Chief Examiner, Seeley, prior to the grant of my basic patent on Method of and Apparatus for Controlling Mechanisms at a Distance.

Reproduced from the collection of the Library of Congress



Benjamin F. Miessner, Esq. -3-

In my experiments and investigations in Colorado from 1899 to 1900, I developed, among other things, two important discoveries which will be essential in the future development of telautomatics. They are described in my patents #685,953 and 119,732 which were taken out at a later date. These two advances make it possible to supply to an automaton great amounts of energy and also to control it with the utmost accuracy when it is entirely out of sight and at any distance.

During the past few years I have devoted much of my time to the perfection of a small, high speed vessel and have developed a new form of prime mover which makes it possible to develop several horsepower for each pound of weight and in my latest designs I am embodying this new machine together with certain new means of propulsion in an endeavor to produce a most effective weapon of defense, such as would seem to be at this time of paramount importance to the United States.

I may be able to respond to your request to furnish you one or two illustrations but am so driven with important work that it would be next to impossible for me to prepare material, myself, for publication in your book which I hope will prove a complete success.

Yours very truly,

H. Tesla

P/S- I have added to the material forwarded, a few other specifications which might be of interest to you in this connection.

8 East 40th Street
New York, N.Y.
October 8, 1915

Benjamin F. Messner, Esq.,
Purdue University,
Lafayette, Indiana

Dear Mr. Messner:

I have duly received your favor of the third instant and wish to thank you for your appreciation of my work, as well as for the delightful frankness with which you have expressed yourself in regard to my mental balance. This is news to me as all my intimate friends, some of whom are men of great achievement, are never ceasing in telling me just the opposite.

It also pleases me to note your receptiveness and enthusiasm which augurs well for your future success.

Perhaps you are right in the choice of the title for your work. My objection to the word is that it implies control by radiations while the art requires a different agency for successful practice.

You are, of course, welcome to make such quotations from my records as you see fit. I will probably be able to send you a couple of photographs giving views of automata I constructed and exhibited.

As to your kind offer to honor me, I am very much obliged to you for the same but I believe that it will be much better for the success of your book not to give too much prominence to any contemporary. Mr. Speirs is a

5,735]



Benjamin F. Miesner, Esq. -2-

men of unerring judgment in this respect and you can do
no better than follow his advice.

Wishing you the best success in what you have
undertaken and looking to the pleasure of meeting you, per-
sonally, some time, I remain,

Very truly yours,

A. Tesla



8 West 40th Street
New York, N. Y.
November 8, 1915

B. F. Miessner, Esq.,
Purdue University,
Lafayette, Ind.

Dear Mr. Miessner:

In arranging my correspondence in a new office just installed, I ran across a letter from you dated July 2d, 1914 which, so far as I can find, has not been answered and must have been overlooked. Please accept my apologies for the seeming neglect. It is my rule to always answer promptly communications from inventors and members of my profession.

In accordance with promise expressed in my letter to you of October eighth, I have had three prints prepared showing two of my teleautomata which have been exhibited on frequent occasions from 1897 to 1899. They have been forwarded to Mr. Sreirs of the D. Van Nostrand Company who will no doubt communicate with you in regard to them.

Believe me,

Yours very truly,

A. T. Sreirs

[161, 725]

1/10/1911
- 10/10/1911

Dear Mr. [unclear]

I am very much obliged to you
and your family for your kind
respective congratulations & hope
I sincerely trust the marriage of your
charming daughter will bring the
beginning of a new life & undisturbed
happiness.

Trusting you will be able to
be so successful in the full
employment of your mind and body
as you are now.

Yours very truly
[Signature]

Edmund [unclear]

The Waldorf-Astoria
New York.

March 11, 1910

James L. Corman Esq. 112 Bleeker Street
Newark N. J.

Dear Sir,

During the change of officers my correspondence is interrupted, otherwise I would have answered you long before.

Interest in the coin problem is increasing of about 150 and the history of the coin problem could be easily explained, but your letter is not clear enough on the point.

You know of course that I have patented years ago a machine in which an amount was measured by currents of differing phase giving a rotating field in which an induction coil

isolated usually in a vacuum tube
oil to that of the field. The film
is now utilized in the so called
Solid Schmidt high frequency
for vacuum tubes & similar work
in it.

Yours very truly

N. Tash

[ILLUSTRATED] A WEEKLY JOURNAL OF ELECTRIC LIGHT, TELEPHONE, TELEGRAPH AND SCIENTIFIC PROGRESS

Vol. 8, No. 24,
WEEKLY.

NEW YORK, SATURDAY, AUGUST 11, 1893.

Copyright, 1893, by THE NATIONAL REVIEW PUBLISHING COMPANY, 21 Park Row, N. Y. City

Printed at P. O. Box 100, New York, N. Y.

Electrical Lying Machine.
A recent dispatch from London states that the success of the "Lying Machine" in a balloon the journey across the Channel from Cherbourg to London has caused no little excitement there.

A decided advance in the art of lying, which will be put to use in the coming year, is the "Lying Machine," a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways.

In the "Lying Machine," the water is forced into the lungs of the person lying down, and the water is forced into the lungs of the person lying down. The water is forced into the lungs of the person lying down, and the water is forced into the lungs of the person lying down. The water is forced into the lungs of the person lying down, and the water is forced into the lungs of the person lying down. The water is forced into the lungs of the person lying down, and the water is forced into the lungs of the person lying down.

The "Lying Machine" has been organized by the "Lying Machine" company, which has devoted its entire resources to perfecting a complete system, which we take pleasure in presenting to the reader. The "Lying Machine" company is organized by the "Lying Machine" company, which has devoted its entire resources to perfecting a complete system, which we take pleasure in presenting to the reader. The "Lying Machine" company is organized by the "Lying Machine" company, which has devoted its entire resources to perfecting a complete system, which we take pleasure in presenting to the reader.

per, and the magnetic frame is the only one in section at the mill. The magnetic frame is in this way, the inventor states, can be used in a variety of ways.



FIG. 2.—VIEW OF TESLA ARC LAMP

The "Lying Machine" is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways.

Mr. Tesla, the inventor, has obtained a patent for his "Lying Machine," which is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways.

In Fig. 2 is shown a view of the Tesla Arc Lamp. The lamp is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways.

The Tesla Arc Lamp is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways.

Perspicacity and Prudence Combined.
"What's the matter, Jones? You look like a fool!"

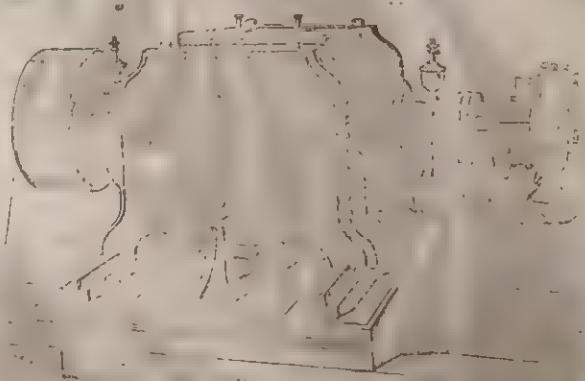


FIG. 1.—VIEW OF DYNAMO OF TESLA ELECTRIC LIGHT COMPANY

The "Lying Machine" is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways. It is a device for use in war or in the navy. It is a small, portable, and easily operated machine, which can be used in a variety of ways.

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N. Y. (24.)

NEW YORK, SATURDAY, AUGUST

BY ELECTRICAL REVIEW PUBLISHING COMPANY, 23 Park Row, New York.

Enter

al Flying Machine.

atch from Berlin states that
e aeronaut L'Hoste and his
aking in a balloon the jour-
Channel from Cherbourg to
ed no little excitement there.
ee-sful attempt to reach a
l on beforehand, and indi-
l advance in aeronautics,
ut to good use in a coming
and Russia have both for
pushing forward experi-
ng machine for use in war
be direction in which they
ng was the one which, pre-
iment just made by L'Hoste
rpilleur, was most likely to
lt ignored the idea of the
which is enormous in size,
to fill in war, and floats—
t—at the mercy of every
ge mark for the first gun-
d bring it to the ground.
Germany and Baranovski
pted the principle of the
sel against the air, and
aking some attempt, at
s own course. In the
resses the inclined plane
boy acting through the
of the boat the resistance
le long motion keeps the
the wind. In the flying
ngarten and Baranovski
n by an engine carried by
acting by means of fans.
the weight of the engine
with the development of
ge of electricity
been built which
mum of motive
nimum of weight.
ould prove suc-
lem of flying in

pering, and the magnetic frame is the small-
est in section at the middle. The magnet-
ism is in this way, the inventor states, con-

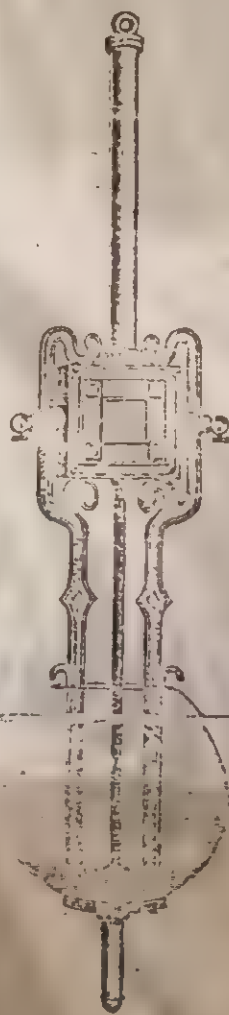


FIG. 2.—VIEW OF TESLA ARC LAMP.

currents in the armature
to reduce to a minimum the
inactive wire on the sides of t
to balance both parts of the
shape of the amature is so
these objects are obtained.

Mr. Tesla, the inventor
broad patents on the regulat
machine on entirely novel p
method of regulation secur
the way of economy and
confident are peculiar to th
No auxiliary resistances, or
are used, and the regulation
out waste of power.

In Fig. 2 is shown a view
lamp. The main objects
secured by the inventor, v
simple and reliable appara
the vibrations of the movab
sequence of the fluctuations
then to obtain a perfect fo
light. The lamp cuts itself
out the aid of any auxi
The action of the magnets
delicate that the feeding

The design of the lamp
the lamp is substantial and

This system is now in
streets of Rahway, N. J.,
are privileged to see it at
pany is now constructing a
machines, and is ready to ge
eral public with an arc light
no doubt, meet with great f

Perspicacity and Pruden
"What's the matter, Jon

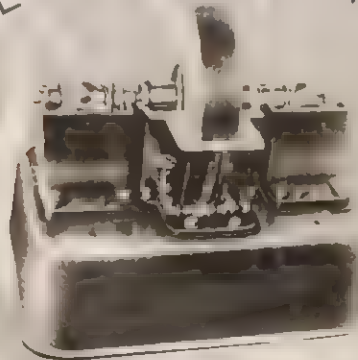






TESLA COMPANY, INC.

STEAM AND GAS TURBINES
BLOWERS COMPRESSORS
VACUUM PUMPS FOUNTAINS
MECHANICAL OSCILLATORS
PRECISION INSTRUMENTS



HIGHFREQUENCY DYNAMOS
LIGHTNING PROTECTORS
INTERFERENCE PREVENTERS
OSCILLATION TRANSFORMERS
SCIENTIFIC NOVELTIES

NEW YORK 8 WEST 40TH ST
TEL 23 VANDERBILT





NIKOLA TESLA
COMPANY

8 West 40th St.
TEL 9000 BRYANT
NEW YORK

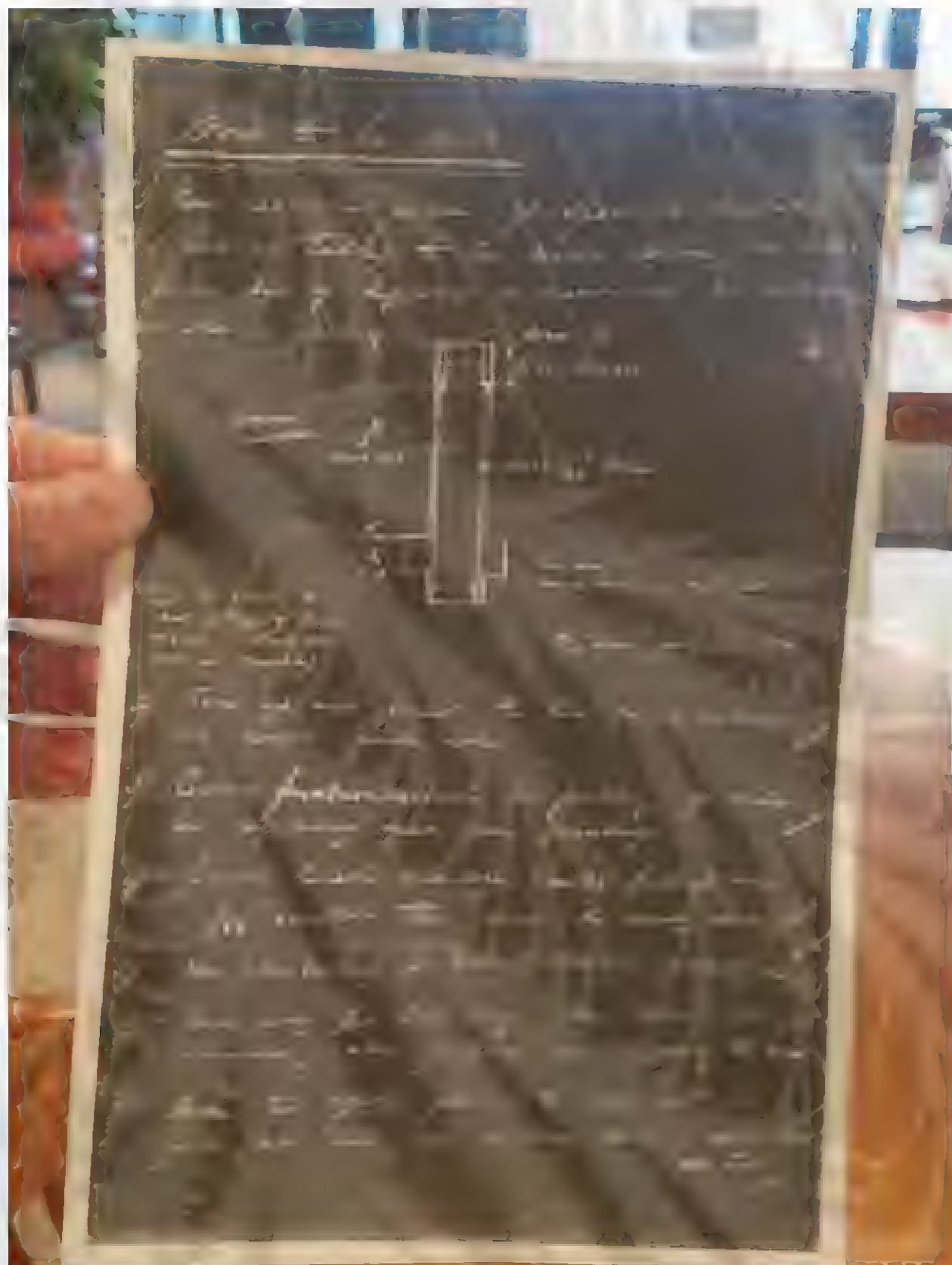


NIKOLA TESLA
COMPANY

8 West 40th St.
TEL 9090 BRYANT
NEW YORK







NIKOLA TESLA
COMPANY

8 West 40th St.
TEL 3035 BRYANT

NEW YORK, N. Y.

Edward T. Jones, Esq.,
818 Roosevelt Place,
New Orleans, La.

Dear Sir:

Your favor of the 4th inst. has been forwarded to me through the courtesy of the Electrical Experimenter, and would have been answered promptly had it been possible. I am at present so busily engaged that I have hardly time for correspondence.

Complying with your request I am enclosing a separate cover & photograph, also a copy of the February issue of the Electrical Experimenter, showing through the ground as through a wire is the principle of my wireless system that I have advocated for years. I shall therefore, look with special interest to your forthcoming book.

Believe me,

Yours very truly,

** I will be glad to send you a copy of the book "Wireless" to you, Germany & for the same.*

Work to be done

- 1) New regulator piece: 1 steel nut. (can be the same as old one but different dimensions as indicated in sketch of new

Note We want a
nut on top of same
metal. (Find old
nut in vault)

the nut is
the same as the old one

- 2, Turn up and finish the two nozzle castings all except 1 fine hole
- 3, Carbon friction contact on pulley of motor for regulating speed when grinding
- 4, finish latest armature with fiber pieces $1/64"$ and 1/32" iron (this already started)
- 5) New fiber bushing for lower oil chamber (already started)
- 6, Make ready for balancing old rotor and armature, also prepare for grinding the new
- 7) Make two square rings to slip on the form now used for winding coils (as explained to Fotty)

Chicago, Ill.

March 3, 1910

Dear Mr. ...

I was away from my office therefore could not
reply sooner.

I worked on the International B. in 1907
at the ... of the Fisher, and was his right hand
man in the ... of his turbine.

I cannot write of my experience with him as
... in name & charm, but should you ever be in
... we could get together and talk around him a
bit.

I am sending you everything I have on hand
and am credited with it.

I would like to know how you get the
information about me as I was contacted some time
by other people here in Chicago.

I Remain

Yours Truly

W. W. Wiebe

252 No. La Salle St.

Chicago, Ill.







NIKOLA TESLA
COMPANY

8 West 40th St.
Rm. 9090 BRYANT

NEW YORK, March 5, 1918

Dear Mr. Scherff:

Under enclosure please find letter
from Mr. Tesla.

Respectfully,

George Scherff, Esq.,
17 Battery Place,
City.



George Scherff, Esq.,
17 Battery Place,
City.
c/o Union Sulphur Co.

RETURN TO
NIKOLA TESLA CO.
8 West 40 St. N.Y.



SERB NATIONAL FEDERATION

LARGEST AMERICAN FRATERNAL SOCIETY OF SERBIAN ANCESTRY

СРПСКИ НАРОДНИ САВЕЗ

3414 FIFTH AVENUE

PITTSBURGH, PA., 15213

December 9, 1978

Mr. Leland Anderson
2525 So. Meade Street
Denver, Colorado 80219

Dear Leland:

Per your letter and request of November 28, 1978, enclosed herewith, please find a Photo-Negative, 4 X 5, of the letter in which Nikola Tesla identifies himself as Serbian in culture and heritage.

As I informed you the original is in our safe in the Serb National Federation office.

In addition, I am extremely thrilled to hear that the Nikola Tesla Biography will be published next year, tentatively in the Spring.

If I can be of any further assistance, feel free to call.

Fraternally and sincerely,

SERB NATIONAL FEDERATION

Robert Rade Stone

Robert Rade Stone
Supreme President

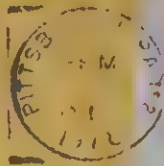
RRS:nk

Enclosure

* inc. 2/10/81

IF THIS IS A RETURN
WITH SPECIAL DELIVERY
SERVICE WAS ATTACHED

SPECIAL DELIVERY



SERB NATIONAL FEDERATION
3414 Fifth Avenue
Pittsburgh, Pa. 15213

Mr. Leland Anderson
2525 So. Meade Street
Denver, Colorado 80219

POSTAGE DUE

FEE CLAIMED BY C.I.A.
DENVER, COLORADO

SPECIAL DELIVERY



RECEIVED BY COURTESY

FIELD NATIONAL FEDERATION

PITTSBURGH

DECEMBER 9, 1978

MS

S. W. 40 St., New York, June 11, 1921

George M. Himes, Esq.,
Box 27,
Phillipsburg, Montana

My dear Sir:

I have duly received your kind letter of May 31st and wish to thank you for the interest manifested.

Of course you know that I am a Serbian, coming from the oldest stock inasmuch as my mother's name can be traced almost as far back as any other in our race. The Editor of the Kansas Farmer and Mail and Breese does not quite realize that the Province where I was born was at that time merely under the political rule of Austria which has nothing to do with nationality.

Wishing again to assure you that I have appreciated your friendly action in the matter, I remain

Yours very truly,

N. Teola

HEALTHY LIFESTYLE
SERB NATIONAL FEDERATION
PITTSBURGH

DECEMBER 9, 1972

1911

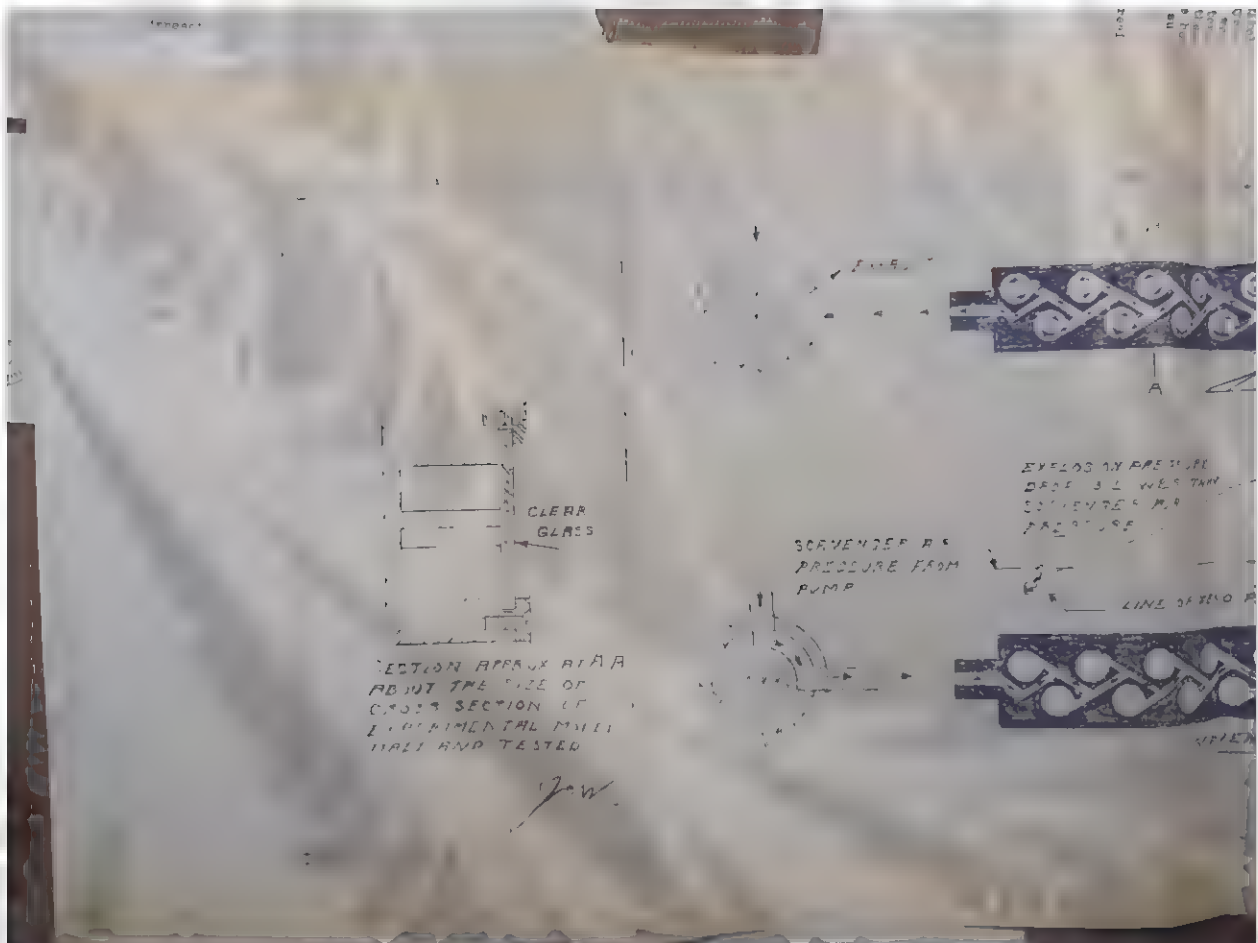
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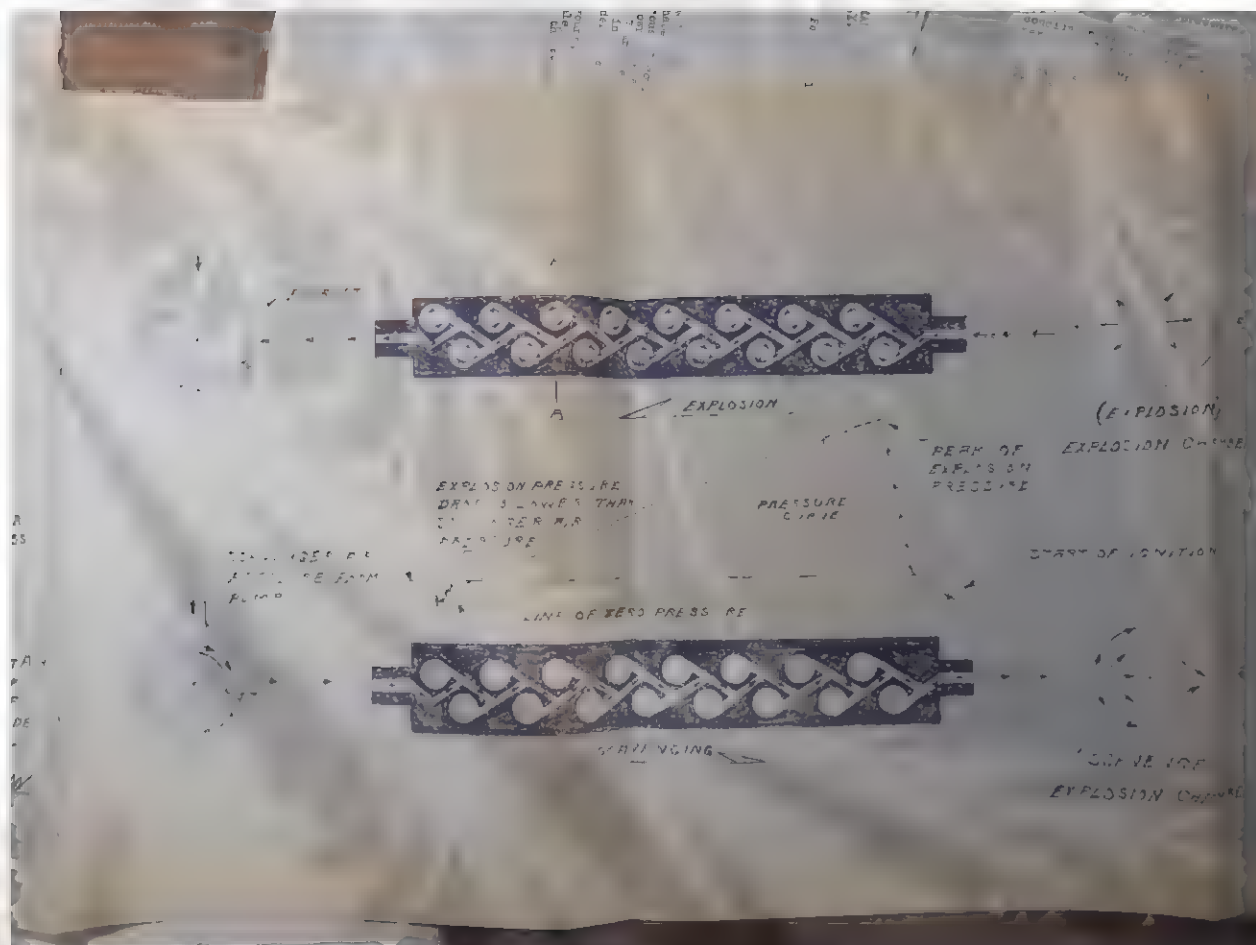
I would

5077

2. 744









SCIP
AS TANK
V.R

PRESSURE
FLUID

OF SEALING



SCIP

THESE TWO DRAWINGS WERE MADE BY THE
DESIGNER OF THE TANK

(EXPLOSION)

EXPLOSION CHAMBER

TURBINE

START OF IGNITION

(SCIP 10)

EXPLOSION CHAMBER

TURBINE

NOTE
THESE USED WHILE
MECHANICAL VALVES
WOULD BE IMPRACTICAL
DUE TO EXTRA HIGH
SPEED OF EXPLOSION

John C. Whitcomb

TESLA
VALVE OR CONDUIT

AND, WHITESELL
109 S GOMEZ AVE
TALLAHASSEE, FLORIDA
SEP 12, 1903



PHONE 876 3837

309 SOUTH GOMEZ

John C. Whitesell
JAMES H. FLORIDA

PROFESSOR OF ENGINE
MECHANICAL

Mr. Leland J. Anderson
1st River Terrace
Minneapolis 14 Minnesota

Dear Mr. Anderson,-

As I have advised, I was the only Engineer,
Designer for Mr. Tesla when he was designing a gas turbine for
automobiles around 1900, incidentally as I look back the only
metal he had to use was nickel and the 12" rotor grew 1'16" in
diameter at 30,000 revolutions per minute. Should Tesla had
metals then as are available to take over 3,000 degrees the
Turbine would have been a success as the principles are the same.

I have had a serious accident and was in the
hospital for the result. Then I went practically blind and had
to have cataracts removed from both eyes, therefore it is hard
to make some kind of a living and have to dispose of a few of
my most prize possessions. Therefore I have enclosed a sketch
of the Tesla Speed Indicator which I have for sale and am asking
\$75.00 for it, It is in good shape to use as an Indicator.

I will go to a Notary and swear to its authenticity
If you are interested I would appreciate
hearing from you.

John C. Whitesell
John C. Whitesell

Speed Indicator of Mr. Nikola Tesla used by him
of the Alternating Current Motor (He advised t

can be used as
stop watch only

All parts are
made of
steel
work.

The movable
part is
used

parts are
made of
steel

very fine
work of
steel
from A. C. C.
work of steel.

It has been a high precision instrument

(Full Size)

Case is - 1/2 in.
lined.

Nikola Tesla
1000
S. 10th Ave
Tampa, Florida.

John T. Whitwell
322 S Gomez Ave.
Tampa 9 Florida
33607

Mr Leland T. Anderson

111 East River Terrace.

Minneapolis 14

Minnesota.

4/50 Vincent St
1411

WILLIAM ST. JESS. & LEO. J. J.
150 Broadway, N.Y.C.

February 1, 1926

DR. PAVL RADOSAVLJEVICH
College of the City of New York
100 Ave. and 139th St.
New York, N. Y.

Dear Dr. Radosavljevic:

I have been advised that you know Mr. Nikola Tesla quite well and that Mr. Tesla is in bad shape physically also that his financial affairs are not prosperous. I would be glad if I could learn the facts in Mr. Tesla's own interests but do not wish him to know of my inquiry, and I am therefore taking the liberty of sending you this letter in the hope that you might be disposed to give me, in confidence, such information as you may have.

Very truly yours,
Calvert Downley
Assistant to the President

vised by Mr George Scullin of
and as to the existence of

retained Mr Gosla to
for automobiles and
I worked for him.

Friday I wrote
believe some

John C. Whitesell
1607 E 50th Place
Chicago 15 ILL

John C. Whitesell
TAMPA 9, FLORIDA

PROFESSOR WILLIAM FAIRBANKS
MINNAPOLIS

September 12, 1911

Mr. Leland I. Anderson
1111 West Avenue South
Minneapolis 10 Minnesota.

Dear Mr. Anderson,

Glad to have received your letter of Sept 7th, but sorry to hear that you are encountering some difficulties in obtaining early records of Mr. Tesla's turbine activities.

I have all the records of what transpired which I kept during my experiences with Mr. Tesla and if you or any of your associates visit Florida I would be glad to spend some time explaining my records.

I am enclosing a drawing I just finished which always appeared to have merit. I believe this is the first idea that Mr. Tesla had where a model was made and tested.

It is a (Or I called it) a Silverer Conduit to be used as a valve where mechanical valves could not open or close without hammering themselves to powder at high speeds (up in the thousands per minute) We made a model as described on the print and had a glass on one side so when we had an explosion we could see smoke passing through the track and getting mixed up in the eddy current which convinced us that we were getting back pressure.

This experiment was never conducted to a conclusion as the work was stopped but the idea to me had some merit and I know that this tracing is the only record.

Mr. Tesla was not only interested in a hot blast of gasses hitting the Turbine wheel like the expanding gasses from a blow torch, but he also wanted to get a real explosion and the gasses hitting the turbine wheel and having fresh air entering the explosion chamber to scavenge the burned gasses and have a more economical product. He always talked of travelling from coast to coast on a tank full of gasoline.

PS. If you make prints from the tracing will you please return the tracing to me.

Yours

Sincerely

John C. Whitesell
J.C. Whitesell.



Apr. 25 1921.

Compliments from Nikola Tesla

... ahead. ... decision upon which ... it ... to ... the ... of ... to ... who ... the ... of ... the ... of ... after, the ... into ... conceived ... in ... of ... in ... into ... power ... barriers, ... living ... by ... their ... in ... the power of ...

2. F. Scott, President, American Institute of Electrical Engineers: "The matter of history is the basic principle and the basic ... which have been the ... in modern electrical engineering practice."

3. A. Wendell, Chief Engineer and Director: "The ... of ... in ... in ... industry, ... in ... and ... in the ... of ... used. -- But since the ... of ... in electricity has a ... truth has been ... simply ... as the ... of ... of the ... of polyh ... leaving ... to ... his ... of the ... to ...

and to eliminate from our industrial world the results of Mr. Tesla's work, the wheels of industry would come to a stop, our electric cars and trains would stop, our power would stop. You, as I have said, are the proof of industry. -- This work marks an epoch in the advance of electrical science. From this work has sprung a revolution in the electric art.

Lord Kelvin (before the British Association commenting upon a Tesla paper presented): "This is a wonderful revelation of the induction coil and destined to be of great importance."

Dr. William Crookes: "The performance of the machine is marvellous."

Nature London: Dr. William Thompson exhibited a Tesla oscillator. He commented that Mr. Tesla, on the perfect working of the oscillator, of his machine.

'Electrical Review' New York: "Mr. Tesla comes forward with perfected and extremely simple oscillators. He believes that the importance of the advent of these new instruments for the advancement of science and industry can not be overestimated."

Dr. S. Kennedy, American Engineer, author, Professor at Harvard University (at the occasion of the award of the Edison Medal): "The medallist is the man who revised the rot of the magnetic field -- that set wheels going round all over the land and all over the world -- and also made the phenomena of high frequency known -- and that he showed us a revelation to science and art unto all time."

H. W. Buck, Chief Engineer, President of the American Institute of Electrical Engineers: "No work of Nikola Tesla at any time in his great conception of the electric field seems to me one of the greatest facts of invention."

ation which has ever been attained by
man. And from his work followed the
discovery of Roentgen, who discovered the
X-ray rays, and all that work which has
been carried on throughout the world in
following years by A. E. Thompson and others
which has really led to the acceptance of
modern physics. His work indicates that of
the present and future the basis of wireless
telegraphy, which is one of the most scien-
tific branches of science and of the most
important of the present day."

John Stone Stone, wireless expert, author, in reviewing the
work of Lodge, Crookes, Thomson and others:
"Among all these, the work of Nikola Tesla
stands out most prominently. Tesla with his
almost preternatural insight into electrical
and current phenomena, what has enabled him
some years before to reveal the part
of electric power transmission through the
invention of the rotary field motor, and
how to make machines serve, not merely the
role of a microphone, to make visible the
electric oscillations, as Hertz has done,
but he made it serve the role of a per-
spective -- He did more to excite the rest
and create an intelligent and retentive of
these phenomena -- than any one else -- and
it has been difficult to make any one else
perceive its revelations in the art of radi-
telegraphy without traveling, part of the
way at least, along a trail blazed by this
pioneer who, though a crumbly ingenious,
practical and successful in the application
he devised and constructed, was so far
ahead of his time that the best of us then
mistook him for a dreamer."

Privy Councilor of A. Slaby, leading German authority
in a letter to Tesla: "I am devoting my-
self since some time to investigations in
wireless telegraphy, and you have been
famous in such a manner. It will interest you to know of this tele-
graphy to know, etc."

Technical review (concerning the wireless): Mr. Tesla's
discoveries in this field have attracted
world-wide attention and his is undoubtedly
the greater mine.

... Sirardou, Leading French expert and author: "On the
and of September, 1897, Nikola Tesla, the
American engineer, applied for patent
protection on a system of transmission of
electrical energy without wires (patent no.
645,775.... This is the star of inner and
outer wireless telegraphy in 1893,
and since the American patent extraordinary
precision, surpassing even to
popularity of the U. S. considering that
Tesla spent of his life in regard to which
we obtained this information only several
years later, so that in 1897 hardly any
scientists like a victory. Later, when it
was recognized that the application of
radio waves to wireless telegraphy was a capital
invention, a number of detractors because in-
vented against the work of Tesla -- it is
Tesla who is the true inventor of wireless
telegraphy and it is certain that
will not be detracted from his name. The
objection that is left to others, the
trouble of profiting from financial results
of enterprises based on his invention
that cruel injustice would it seem to try
to stifle the pure glory of Tesla in com-
ing him scornfully with the present re-
sults of those who had the chance to be en-
dorsed by the financiers.."

Dr. L. M. Austin, Leading Government expert of the United
States (referring to Mr. Tesla's work):
"I consider him the father of wireless....
His lectures on the wireless system contain
full description of a wireless system
superior to anything which we actually had
in practice before him."

"Der Electro-technische Anzeiger" Berlin, 1900, "Elektrotech-
nisches" (concerning the wireless work) 115

is a complete and technical information on the general situation of the country and the various departments and the various branches of the economy.

1. The first of these is the fact that the Government has not been able to secure the necessary funds to carry out its policy of non-alignment. This is due to the fact that the Government has not been able to secure the necessary funds to carry out its policy of non-alignment.

C. I. Judds. Progress; studies of
and civilization of man...
of the ...
to attend ...

[illegible]

Harold Jannoy, Chief Engineer, Liverpool Steamship Co.;
"It is a great invention."

Dr. L. J. Allen of the experiment: "What are we in the world. Officers are really depressed with it."

—**Alfred Russel Hutchinsonson, Chief Engineer:** "It is the greatest invention of the age."

Paul Irving, Chief Engineer, Selfservice-Ceollobast, Germany: "It is the idea: the turbine."

the Motor oil," "The new principle undoubtedly is a great contribution to solving the problem of increasing the tenacity and strength of application.

Dr. F. J. Johnson, General
turbine.

Scientific *Merion*: "considered from the mechanical point, the turbine is ^{an} excellent and economic in operation, should prove to possess such activity and function

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2. The second part of the document is a list of names and addresses, which appears to be a directory or a list of subscribers. The names are written in a cursive script, and the addresses are listed below them.

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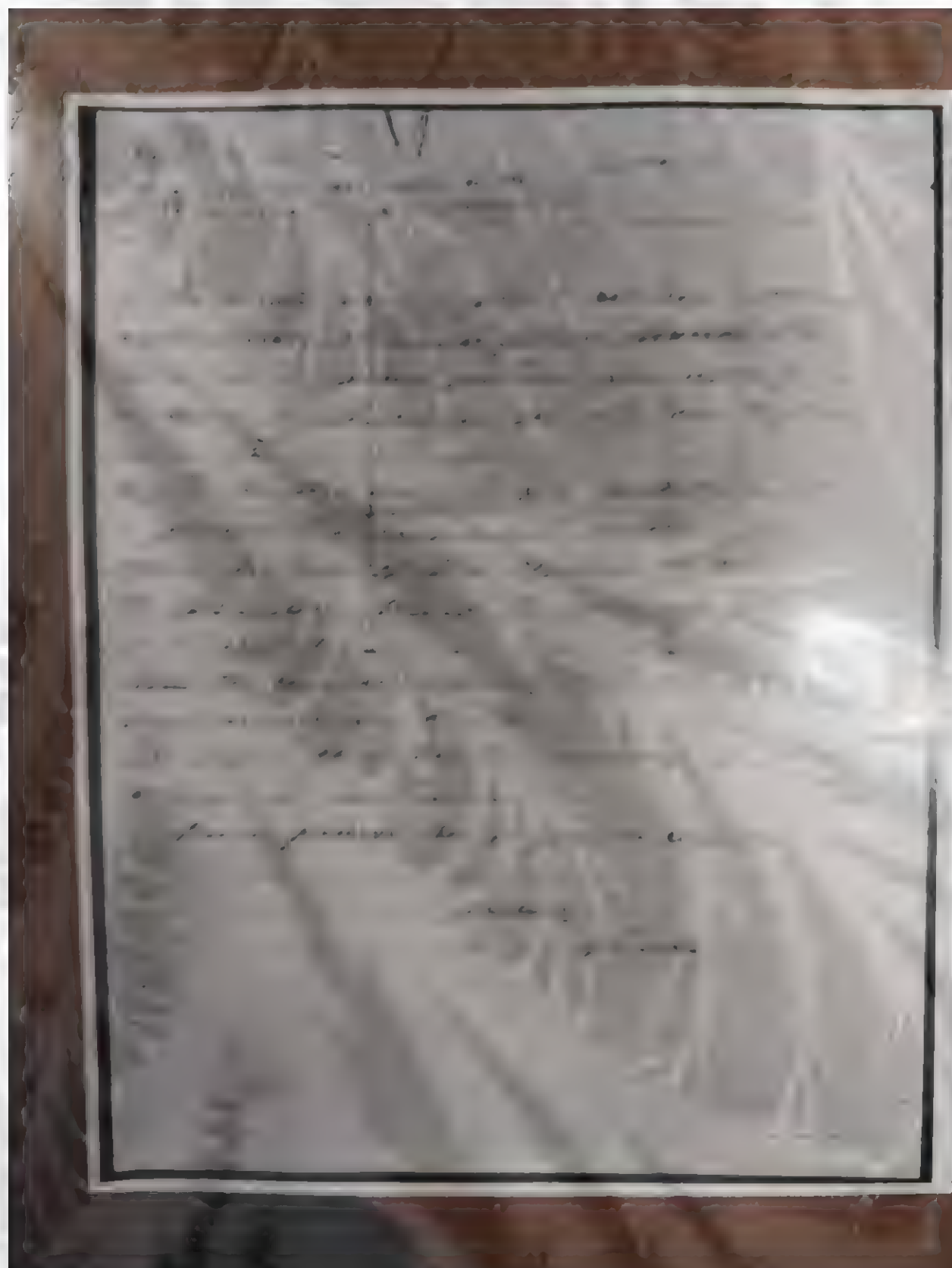
6. The sixth part of the document is a list of names and addresses, which appears to be a directory or a list of subscribers. The names are written in a cursive script, and the addresses are listed below them.

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Letter to Marygrove
February 28, 1930

My very dear Luke:

I have enclosed draft with the intention
of forwarding it to you when I hear
that you had just left for Chicago. I hope
that you take me over the place and do
it all. There is a little thousand that
for your business.

My affairs are a little hard project
since relocations.

The article in the magazine I am
sending (definition is nearly) my own
you a few moments discussion.

Hoping that all is well with you
I remain as ever your sincerely

A. R. S. please
10 East 15 Street
New York

K. S. S.



Letter Philadelphia, Pa.
January 11, 1914.

My dear Sister,

Here is the acknowledgment receipt of Ten
Hundred Dollars (\$1000) which I promise to
return within three weeks.

My former private secretary, now assistant
of the Home Sulphur Co., George Schaeff, is
familiar with all my affairs and in the position
to make the best of my interests and protect
your shares, anything better to me than
him or my own intelligence and business ability.
I consider him as a perfect gentleman.

And you are by best friends and I hope that
I shall soon have an opportunity to show you
how much I am appreciative of your help.

A. W. Johnson Esq.

327 Washington Ave. N. Y.

As soon as possible
to the



HOTEL PENNSYLVANIA
NEW YORK

July 20, 1940.

My very dear Duke:

Sorry I could not reach you
Saturday. May the love reward you
for your Samaritan deeds with a long
and happy life - longer than that
of Sam Agoo!

Love you

Frederick

Mike

Love Agoo
P. M. 1940
-Mike



Mr. R. L. Johnson Esq.
October 1, 1914.

Dear Sir:

Thank heaven I am just enough
to finish the enclosed, may you
be ~~the~~ ^{the} ~~recipient~~ ^{recipient} of the blessing
you deserve. I am so grateful to
you that I forgive you everything
that a grateful business man
like administrator for your ^{attention} ~~attention~~
and I am in great
yours truly
John A. Smith

to R. L. Johnson Esq.
7 East 43 Street
N.Y.C.

you wish to write
to the editor of this
journal has
been forwarded

to the
editor

THE EDITOR OF THE
JOURNAL OF THE
ROYAL ANTHROPOLOGICAL INSTITUTE
LONDON
W.C.1
ENGLAND

W.T. Gill
The reader of the great deal of the
consequence of the matter, however,
does not write for the sake of
himself, but for the sake of the
community. It is the same as
saying that the body can be
changed into the mind and the
mind into the body. We know
that the mind is a function
of the body, and the body is
made up of the same material.
Without a body there
can be no mind, and without
mind there can be no body.

Consciousness has for its development
a material explanation. The development
of the human mind is the result of
evolutionary processes. The mind is
not a separate entity, but a function
of the body. The mind is a product
of the body, and the body is made
up of the same material. Without a
body there can be no mind, and
without mind there can be no body.

the subject goes on with to describe
about, in order to explain this
phenomenon. Einstein has
mentioned it as a possible "law" but

My theory of gravitation
explains this phenomenon
perfectly.

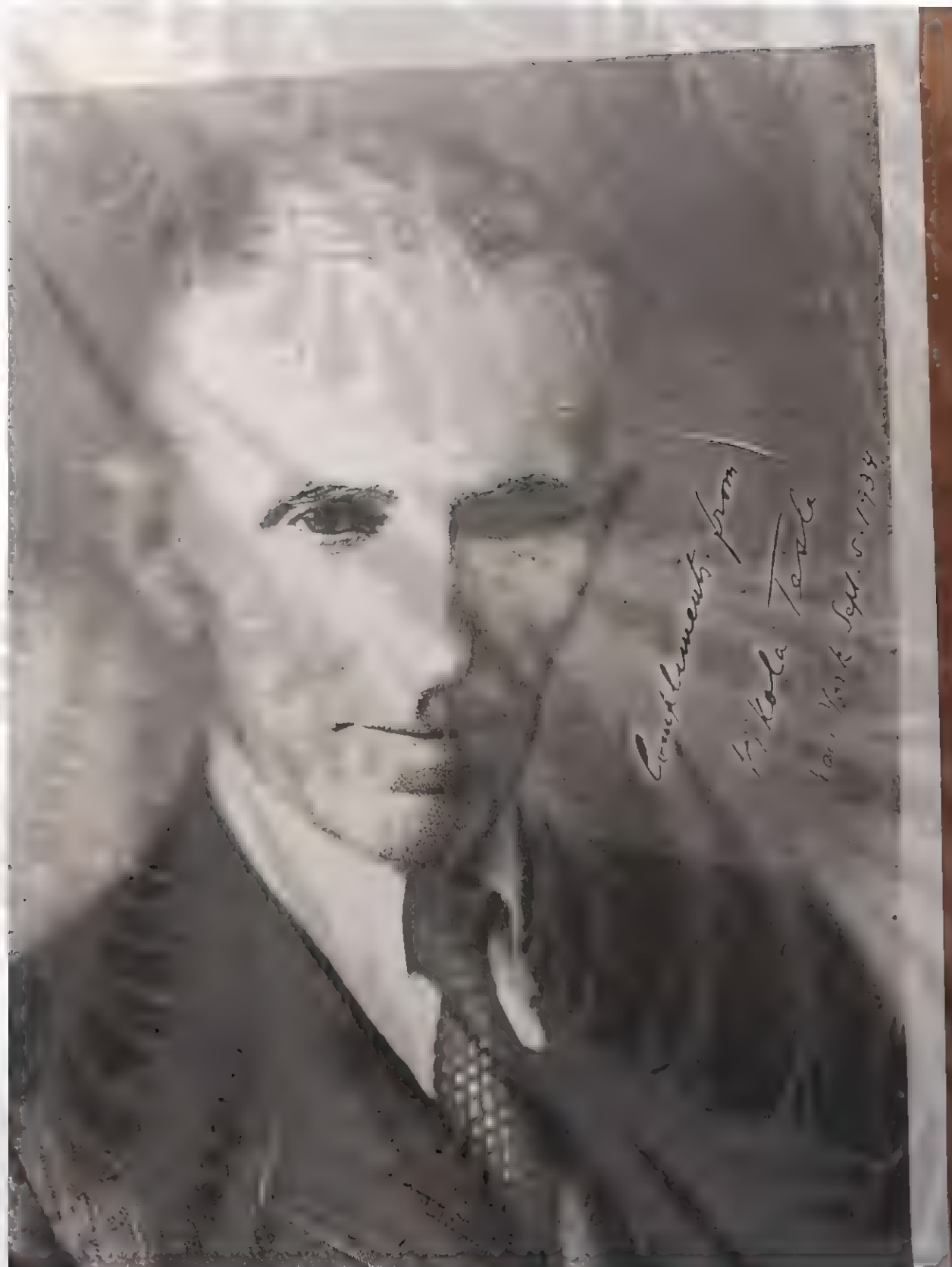
N.T. April 11, 1932

We read a great deal about the
transformation matter has;
change into force and force
being changed into matter
by the so-called laws. This is
absurd. It is the same as
saying that the body can be
changed into the mind, and the
mind into the body. We know
that the mind is a function
of the body, and as such a
mind in force is a function of
matter. Without a body there
can be no mind, without matter
there can be no force.

Einstein has for years developed
formulas explaining the mechanism
of the universe. In doing this he
overlooked an important factor
namely the fact, namely that some
of the particles of matter are moving
in different directions. This
is the same as saying that the
universe is a moving target.

THIS IS A PHOTO COPY OF
A LETTER WRITTEN BY
ALBERT EINSTEIN
ON APRIL 11, 1932
TO NATHAN TOLMAN
OF THE CALIFORNIA
INSTITUTE OF TECHNOLOGY
PASADENA, CALIF.

THIS IS A PHOTO COPY OF
A LETTER WRITTEN BY
ALBERT EINSTEIN
ON APRIL 11, 1932
TO NATHAN TOLMAN
OF THE CALIFORNIA
INSTITUTE OF TECHNOLOGY
PASADENA, CALIF.





Letter from Gordon
New York September 26, 1934

G. S. French Esq
627 West 113th Street
New York
Dear Mr. French,

Your letter of the 14th and
15th inst with draft of letter -
now have reached me but I
had to concentrate all my
energies on an important



HOTEL NEW YORKER
34th STREET & EIGHTH AVENUE NEW YORK CITY



Back and was unable to
answer promptly

You see a very old letter
but you did not get suffi-
cient information and some
slight changes will be necessary
to make the statements more cre-
ditable to both of us and the
majority. Perhaps the few
glimpses of my work, as reflected
in the enclosed article are

فصل اول در بیان کلیات

I shall be very glad, indeed, to
have a copy of your book in my
collection some other time. But
now I can only express a longing
for the book to receive mine
in the afternoon at your own
convenience.

Journal of Management Inquiry 18(6)

De la nature de la vieillesse

John F. Kennedy

PHILIP FITZHUGH STRYKER
4004 BEECHER STREET N.W.
WASHINGTON 7 D.C.

ORIGINAL LETTERS, DOCUMENTS & MANUSCRIPTS
OF HISTORICAL AND LITERARY INTEREST

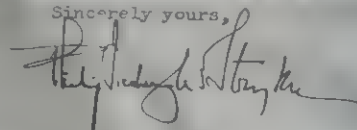
FEELER 0284

Dear Mr. Anderson:

Your splendid article on the papers of Nikola Tesla came to my mind this afternoon when, in going through a collection of minor autograph material, I discovered a little note of George Sylvester Viereck. It is so very minor that I'm almost embarrassed to send it to you, but you might find it of some interest.

Best wishes for the New Year.

Sincerely yours,



Mr. Leland I. Anderson
1615 East River Terrace
Minneapolis 14, Minnesota

Enclosure.

L.S. 4to G.S. Viereck
October 3, 1934, to Arthur Lengel of
the Liberty Magazine.

now.

January 19, 1963

Phillip Fitzmaugh Stryker
400 Beecher Street, N.W.
Washington 7, D. C.

Dear Mr. Stryker:

Thank you very much for the L.S. of George Oliver for
Viereck which mentions Tesla and which you were so
thoughtful in sending to me. Thanks, too, for your
kind words about my short piece in Manuscript. Tesla
was indeed one of those dedicated savants of whom the
lay public knows comparatively little.

Very truly yours,

AMERICAN
JOURNAL

100

محمد بن عبد الله بن محمد

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

C. Campbell was Associate Editor of
Play, 1901, his article "A Machine to
 or" and his address appeared in
 the January 1, 1901, issue.

... by Mark under the pen
... of the Youth and ...
... March, 1945, from ...



Letter to Graham

New York October 11, 1935

P. S. Winick Esq.

627 West 111 Street

New York

My dear Mr. Winick:

Thanks for your fine letter
and welcome that I shall be much
pleased to see

The Liberty people only show
good discernment. My magazine
editor should be glad to get a

entirely from a sense of your (the
only) administration and willing expression
I appreciate a suggestion more than
I can express in my letter to you
as I feel you deeply by what thing
of love is linked to the relation of
the world and constant presence above
you of meditation and I also gladly
entirely the opportunity to be of clearly
explained to the readers in your
personal style
We can post together early in the
evening week for a discussion of
the subject. Truly yours
Dr. T. L.



Hotel New Yorker
November 4. 1934.

J. S. Viereck Esq.
627 West 113 Street
New York.

My dear Mr. Viereck:

Your poems have almost
stunned me, otherwise I would
have thanked you before this for
the book.

You are a poet of the first

order perceiving of the genius of Goethe, to a
Heine, Bürger, Byron, Poe and other words
classics - a combination productive of portraiture
wonderful results. Your range is from with the
a delicate touch to the destruction of a
blow of a sledge hammer and you express
can project yourself through time and he is
space as no other. time

"I wanted there were the this road all in

From the Brocken's crag to the Ap. ~~tree~~ time

Be it due to the fascination of music
mythical figures of beauty and power - or words

of Goethe is a rare quality you possess, your
other words are like a magic carpet trans-
ferring the reader to distant places
is from with the speed of thought.

Were it not for your masterful
expression, some of your poems would
be horrible. But in your case one
is tempted to say: "do it again and
all will be forgiven."

What is it that prompts you to
mislead the world in regard to your
status in an unspeakable sphere

of human activity? You are a
sinner but only in your conceptions.
Your loves and misdeeds are wholly
imaginary. You were never a Don
Juan but rather a tailless rooster
preening himself.

Sincerely yours

N. Tesla

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to



Hotel New Yorker

New York Nov 21, 1934.

F. S. Viereck Esq.

Esq. 121 West 57th St.

My dear Viereck:

Referring to your letter of the 5th
inst. I read your beautiful poem 'The
Parade' before and last proposed myself
to lend a few words with you in regard
to your views on Hitler and international
responsibility.

Death can not be destroyed, nor can it
be created. But this statement must be qualified.

force in the result of the action of
matter. If all action were to stop, gross
matter would disappear.

You have dealt in the question of indi-
vidual immortality. You ask how I
can ever have ignored that now I propose
to ascertain the truth by experiment. The
idea was to take a chemical combination
of atoms A and B, separate these constituents
and then put them in the presence of an
atom C from another source but
otherwise the same as B. Now, if
it be found that A will invariably
combine with B, immortality is impossible.

From hence, "the terrific mother" begot from
"void eternally" as a source of form and order,
there was no change in the quantity of matter
provided that this term also included the ether,
heretofore the medium in philosophical works was
confined to things perceptible and the above
time honored scientific doctrine is false, for
gross matter is ever changing in amount being
continuously produced from ether and again
disolved into the same. In the last ana-
lysis the entire universe consists of ether
which can not be created or destroyed and
consequently, remains eternally constant in
quantity. I have made a discovery of
incalculable importance in this connection.

not, except in striking experiments.
One of its many consequences is mentioned in
the second paragraph of another article.

Dr. Kelvin was explicit in his other
writings that the ether must be the substratum
upon which this active medium indispen-
sable to the Newtonian interpretation of the
luminiferous ether. They have even strayed so far from
rational concepts as to believe in the
interchangeability of matter and ether. This
is the absolute nonsense, of course. It is
like saying that the only way to understand
the world is to understand it. The only point
is that the ether is the substratum of the positive
light of the day and even in darkness. That is

will be swayed by hope and fear, but the
time may come when individual consciousness
will be completely eliminated and
replaced by a consciousness of the whole.

Then our tortures will be ended and
we shall consider ourselves fortunate.

If you are disappointed, the feelings
of anger and desire gradually
complete and unobscured satisfaction
your life will be longer and much
more enjoyable.

Yours truly

W. B. Yeats

head of organic or emergent body or
shape is demonstrated in many in-
stances that the same combinations re-
sult. My experimental skill was well-
fully adequate to the task and I
have left its carrying out to others.

The desire for continued existence,
which has tormented humanity from its
very beginnings, can be traced to the mo-
mentum of the elementary masses compo-
sing the human body and whirling at
prodigious speeds. The urge felt is a

physical reality comparable to the sensation of weight, but individually is an illusion. This is the basis of all trouble to grasp for it is, curiously, contradicted by every instance of the same. For what they reveal to consciousness is nothing more than a stage. You are not Viereck but a succession of different existences, a manuscript speaking things and opens to its inevitable dissolution. You have no mind, no knowledge, no memory, and there is absolutely no record of past events in your brain. You are only a wonderfully intricate

ed - instrument with numerically sensitive
or - capture organ increasingly responding
all - to external stimuli and controlling all
own - thought and action. Your fellow beings
are everywhere in every aspect like yourself,
as - answering in the same manner to identical
are - influences and the close correspondence
apparent of the reactions of the body, natural
through understanding and reason. So the mind
desires - search of Man is simplified, not
knowledge - through his own initiative - for there is
no free will - but through the in-
evitable drive of external forces. For
brain - none yet to come every human being
into

[illegible]

I'm in everything else - I'm in the
circumstances but now it's to you a
man of your - I'm in the
from anything else - I'm in the
from you - it's a love to the
world.

When I received your book
"Spreading Fear to the World" I was
in a world of my own - I was
in a world of my own - I was
in a world of my own - I was
in a world of my own - I was

but when I returned the night with its stillness
and quietude, and the softness of my room
with its warm glow and the softness of my
bed due to a heavenly dream & an
angelic thought. I was in bed and I
thought of my past life beginning with the
expression of my childhood and I was
surprised to find that I could not recall
clearly even the faintest image of my
ancestors. It was a dark night with
falling rain. My brother, a youth
of eighteen and a brilliant genius, had died, and
my mother came to my room, took me in her
arms and whispered sweet words: 'Come, I am
and kiss David.' I passed my hand over my
the 'cold lips of my brother' having only a faint

Hotel New Yorker

New York December 17, 1939

E. H. Viereck Esq.
127 West 115 Street N.Y.C.

Dear

Dear Viereck:

My capacities are limited and sometimes it happens that I am baffled in my efforts to solve the problem confronting me. It then becomes a question of life and death for the urge to find a solution is so great that I can not overcome it no matter how hard I may try. Inevitably, I am driven to extreme concentration at the peril of a blood clot or stroke in the brain. The mind

...the ... of the ... - I have not ...
... the old ... what ... like ...
... the ... of after ...
... But after days ... in ...
... separate ... I finally ...
... of last ... with the ...
... excluding everything else ...
... I reach that state I am not far ...
... the goal ... ideas are always ...
... I am an exceptionally accurate ...
... of ... in other words ...
... that is that ... I am always ...
... that when I get through for there ...
... doubt that ... of the ...
... brought out ... to light ...
... let us all go if we ...

to this kind which my interest you as
psychologist. Years ago, after evolving my
system of wireless transmission of energy, I
came to the conclusion that to put it on a
sound engineering foundation I had to in-
vestigate the electrical systems of the earth.
The task seemed almost superhuman, but I had
the help of ignorance to undertake it.
I retired and passed several months in most intense
concentration eventually gaining a clear
view. I realized then I was at the point of no return
and my slow return to the normal state of
being had I experienced an agonizing painful
crisis lasting after something indefinable. During
the day I walked as usual and the feeling
soon though it persisted, was much less pronounced.

The day, however, was miserable and many
of my friends were left from their work
and the English Committee to go out and
see the house. Then I did not enter a
multitude of appearances. I found myself in
Paris - after I had fled from London to
escape the press raised about me - I found
I had to get off some good proofs for me
of my lectures before leaving and while
during this a messenger handed me a
telegram from my uncle which read "from
mother - by my duty if you wish to
be well be alone" I waited for the train
and after a three days journey in the
mountains I reached home again I reached
home and celebrated, by eating too much

[illegible]

... to justify it made a man
... of what I remember. The
... of effort was possible
... for withstanding that
... of the enormous strain.
... I found a deepening. I
... against things and with
... by the darkness and
... of the night, I watched intently.
... looking like an alien
... a sign and then
... into a deep rain
... an advantage
... and I saw
... the center of
... looking
... of my
... as

that some long dreamt of happened
after put us again to bed and lingering
a little while with some streaming I had gone
the one at midnight and at midnight he
took away the other one. This remembrance
was like a scene in the wilderness kept
alive by some strange power of the brain
in the midst of oblivion. My recollections
came slowly gaining in clearness and after
hours of thinking the image appeared sharply
defined and in a pulsation of light which
astonished me. Recovering more and more
of my past life I came to realize by these
visions experiences in the wilderness by visiting

at the next morning again the face, then
surrounded by a strange radiance and a
vibrating light and grouped around the
own figures like those of a nightmare.
The apparition passed slowly across the
room and out of my vision. In the
instant a feeling of absolute certitude
seized over me that my mother was dead
and, sure enough, a maid came running
who brought the awful message.
This knowledge gave me a terrific
shock and suddenly I became aware
that I was in New York! My mother

and three years before but I had forgotten
it. How could this happen? I asked myself
and after some reflection, I was able to
account for it. It was due to the fact that
the mind does not always register
reflections of previous experiences, when
experiences are not the outstanding
ones. I think that the restoration of a
particular department of my consciousness.

At the time the events related actually took place I was in a hysterical state and I believed it certain that there was really a poisoning as a repetition of food written across from my mother, but I was dissuaded the day or there around. I am presently and finally, by every thought and act of mine, trying to

But I am nothing more than an automaton re-
sponding to external stimuli and passing
through an experience of different existence,
from the inside to the front.

The explanation of these mental phenomena
is, after all, very simple. Through long concentra-
tion on a special subject certain fibres in my
brain, for want of standing up and down,
were benumbed and could no longer respond
properly to outside influences. With the diversion
of my thoughts they were gradually vivified
and finally brought back to their normal
condition. The desire to see my mother was
due to my examination of some artistic pictures
shown by herself which had awakened in me
faded memories shortly before I began to
concentrate. I heard the music because my

2016 N. W. 27th. Street
Gainesville, Florida. 32605
Feb. 13, 1977

Dear Mr. Ratzlaff:

Sorry for the delay in answering your letter but lately I have had so many many speaking engagements I have not had the time even for my lab.

You may certainly use my photographs in your book with credit. Please be sure and send me a copy when it is published - also the bibliography.

The oval portrait is of Angelina Trbojevic (Tesla) Tesla's oldest sister born in Senj.

The one with the broad forehead is of Milka Qlunichic Tesla's second oldest sister born in Senj.

The last with the buttons on her dress is Marica Kocanovic or Kosanovich (Tesla) his youngest sister born in Smiljan like Tesla.

DHNE → N
Dave his oldest brother apparently died from a fall down cellar stairs when he was 12 years old (no photographs of him or the mother. He was born in Senj).

Some have said that before he lost consciousness and in delirium he accused Tesla of pushing him. He died later from the head injury - probably a hematoma. Whether the story of Tesla pushing his brother in a boyish scuffle is true or not I do not know.

Marica's son Sava N. Kosanovich later became Minister of State for Yugoslavia. Marica was also a very good mathematician like Tesla.

I hope I have been some help. Use this letter as permission to use my photographs with credit.

Sincerely,



Philip S. Callahan

LETTERS

TESLA, NIKOLA - 1934, DECEMBER 17

OBJECT
COUNTRY

Letter
United States
New York, New York

ACC. NO. 67.64.2 A-B-C
NEG. NO.

DATE

December 17, 1934

MATERIAL
MAKER

DIMENSIONS:

L. 6 3/4" W. 5 3/8"

DESCRIPTION: 12 page (3 sheets) Holograph signed letter from Nikola Tesla (American electrical inventor) written in the Hotel New Yorker and addressed to G.S. Viereck, psychologist, telling him about a strange dream experience concerning Tesla's mother; the letter concludes by saying he would be delighted to meet Mr. Macfadden (Bernarr).

REMARKS: Letter paper contains Tesla's monogram.

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PHOTOCOPIED FROM ORIGINALS IN THE
ARCHIVES OF THE LIBRARY, HENRY J. SAGE MUSEUM
& GREENFIELD VILLAGE, DEARBORN, MI.

REV. W. C. NEVILS,
EDUCATOR, WAS 77

Ex-President of Georgetown
and Jesuit 59 Years Dies
—Led U. of Scranton

Campion House Superior
In 19 Father Ne is

HERMAN B. DELMAN,
A SHOE DESIGNER, 60

Herbert B. Deanna, noted shoe designer, died yesterday at his home at the Madison Hotel after a long illness. His wife

Mr. Nelson was also well-known as the owner of a successful automobile. He was born in Pomona, Calif. and went to school in Tillamook, Ore., where his family owned a small shoe store.

About twenty years ago, Mr. Delmar founded De. Farm near Louisville, Ky. Among his many sires, racehorses were Hoo Roaring and Lady Dunstan. He retired as head of the Delmar Shoe Company last year and went to live in Palm Beach, Fla.

Draths

Frattini

Deathe

MACFADDEN DEAD; HEALTH CULTIST, 83

Magazine Publisher Known
for Pleading For New
Orleans, Called Liberty

ED. ADEL GRAFIC HERE

Donor of \$1,200,000 to State
S. of N. H. S. 1915
Author of Encyclopedia

Mr. Macfadden was a
physician and a
magician. He was
born in New York City
in 1842.

He was a health cultist
and a health cultist.
He was a health cultist
and a health cultist.

He was a health cultist
and a health cultist.
He was a health cultist
and a health cultist.

He was a health cultist
and a health cultist.
He was a health cultist
and a health cultist.

He was a health cultist
and a health cultist.
He was a health cultist
and a health cultist.

MAJ. J. J. LILLY. EX-CITY OFFICIAL

Retired Aide to Corporation
Course - Dead - Served
W.D. 690 N.Y. Infantry

MAJ. J. J. LILLY
W.D. 690 N.Y. Infantry

WALKER, PASTOR

Walker, Pastor
Walker, Pastor

Walker, Pastor

Walker, Pastor

Macfadden Funeral Held

Macfadden Funeral Held

DAVID W. HENR WAS TOLEDO U.

David W. Henry was a
Toledo University student.
He was a Toledo University
student.

Dubov, Blind Aid

Dubov, Blind Aid
Dubov, Blind Aid

MRS C SHILLAH

Mrs. C. Shillah
Mrs. C. Shillah

Nelson W Estle

Nelson W. Estle
Nelson W. Estle

Henry Y

Henry Y.
Henry Y.

Mrs. Henry Suydam

Mrs. Henry Suydam
Mrs. Henry Suydam

Nelson W Estle

Nelson W. Estle
Nelson W. Estle

Henry Y

Henry Y.
Henry Y.

Mrs. Henry Suydam

Mrs. Henry Suydam
Mrs. Henry Suydam

EX-REPUBLICAN



Hotel New Yorker
New York December 20, 1939

Hi-rack by.
Post 113 West, N.Y.
My dear Mr. [unclear] friend,

Thanks for your letters of the 16th
and 20th inst. Like I am afraid that I
will get a swollen head from your praise.

I do not know whether I have brought
out clearly the most striking features of
my recent adventure, namely, that everything
I saw, heard or felt appeared entirely new
to me. I never realized that I had

actually lived the same life before and
the final shock that shook my life like
an earthquake. What I want to say is
not likely to be repeated for there is
not more than one individual who
who could survive.

In view of your interest in it
to me that if we had a short title you
might write a short article on it
by letter and perhaps a book review
could be realized. We are in the same
day long, stranded on the highway and
are a little of the 19th, have not
in anything in the flight.

I am glad to hear that there

the interview will come out as I
expect to render a real service to some
friends by converting them to my doctrine.
If it were not for my unbreakable re-
solves I would have been delighted to
accept a confidential position. But you
know that I have already cut down my
proportion of life by a quarter of a
century in abandoning alcohol and must
take good care to conserve the one hundred
and twenty five years left.

As ever sincerely yours

N. Tasle



New York December 31, 1934

To my Friend and Incomparable Poet
George Gordon Byron

Fragment of Egyptian Temple

While listening on my cosmic phone
I caught words from the Egyptian temple
A whisper was blown around
That much I could guess, and by sound

There's shadows with the lines
Will lay a problem as even

The hardest is I fear to be lonely
how to retain the presence of his heart

that that is forever looking there.
He found that but in every where
But now he is vanishing, you see,
How sad! surely another night he'll be!

I write earnest, but truth he is good!
"To remember that such he forgot."
Some think it was a practical joke,
He takes it to heart as all but words, &

"So it then splendor and heavenly fire—
Why it is every beginning there!"

"By what I understand longer
and are always for drinks and stronger
drinking is to look to look around
to do hard a job as never found."

"Below, in South, they work at first least
and now are coming in thick and fast.
The latest letter of a woman from
to be pulled in very poor from
the are way with so much and steady
None beggars are a part in mistake."

"For last, Sir Isaac, they dimmed your reason
that turned your great science upside down.
After a long haired crank, Einstein by name,
put in your high teachings all the blame."

Says: matter and force are transmutable
and wrong the laws you thought immutable?

"I am much too ignorant, my son,
For grasping schemes so finely spun.
My followers are of stronger mind
And I am content to stay behind,
Perhaps I failed, but I did my best,
These masters of mine may do the rest."

Come, Kelvin, I have finished my cup -
Here is your friend's letter coming up."

"Oh, father Kelvin, he is always late,
It would be useless to read it with me."

The volume -- a struggle of right against wrong --
Of knave and -- the bedlam of the street --

Edith Taylor
London.







Hotel New Yorker
New York, N.Y. - 10011

J. S. Pinckney Esq.
647 West 115 Street
New York

My dear Mr. Pinckney:

Thanking you for the very
kind note I am reminded
in regard to the fact of my
being in the city and
convinced in my mind to a great

There is no more, as by common
sense they are one up on each,
they will just be taken off without
the law that suggests it.





Hotel New Yorker

New York April 1, 1935

Mr. Sylvester Kirsch by
27 West 113 Street
New York.

My dear Kirsch,

Receiving at this late date
your kind letter of March 25th
I am surprised that I did hear
from you. I know that you are
trying to be more just to me.
I am horrified to think that

a person who has just left his
home for any foreign destination.
It is a revolutionary and powerful drug,
if you want to reach a destination. It
has no side of violence & it is
a calm and soothing while open as
dangerous and deadly.

I am thinking of you often. I
am sure of the fact that I have been
a lot of love and care for you.
I hope that your nervous system
is getting back to normal. I am
very sorry, with respectful regards
to the friends and family.

J. J. J.



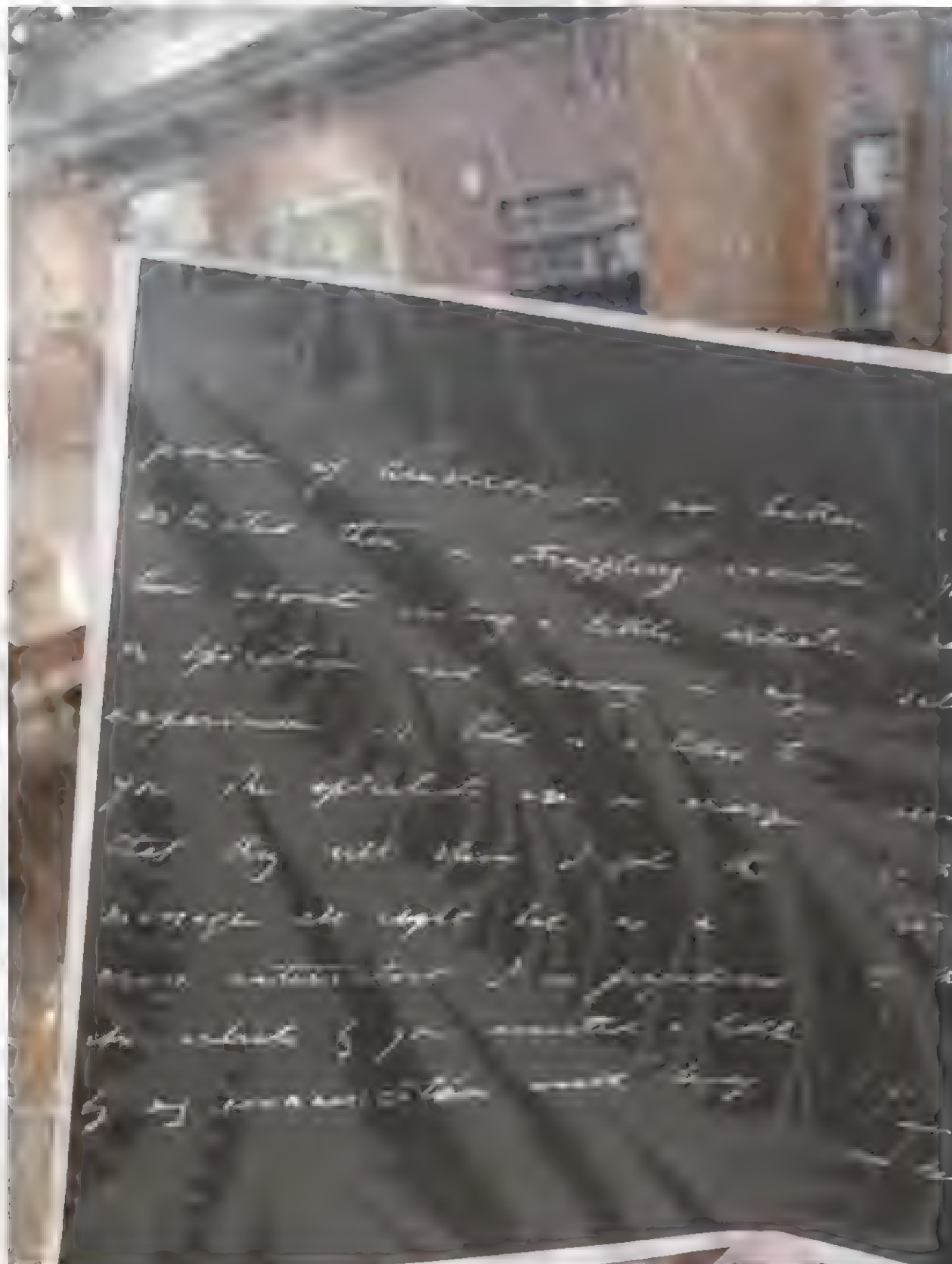
Hotel New Yorker
NEW YORK

April 1, 1934

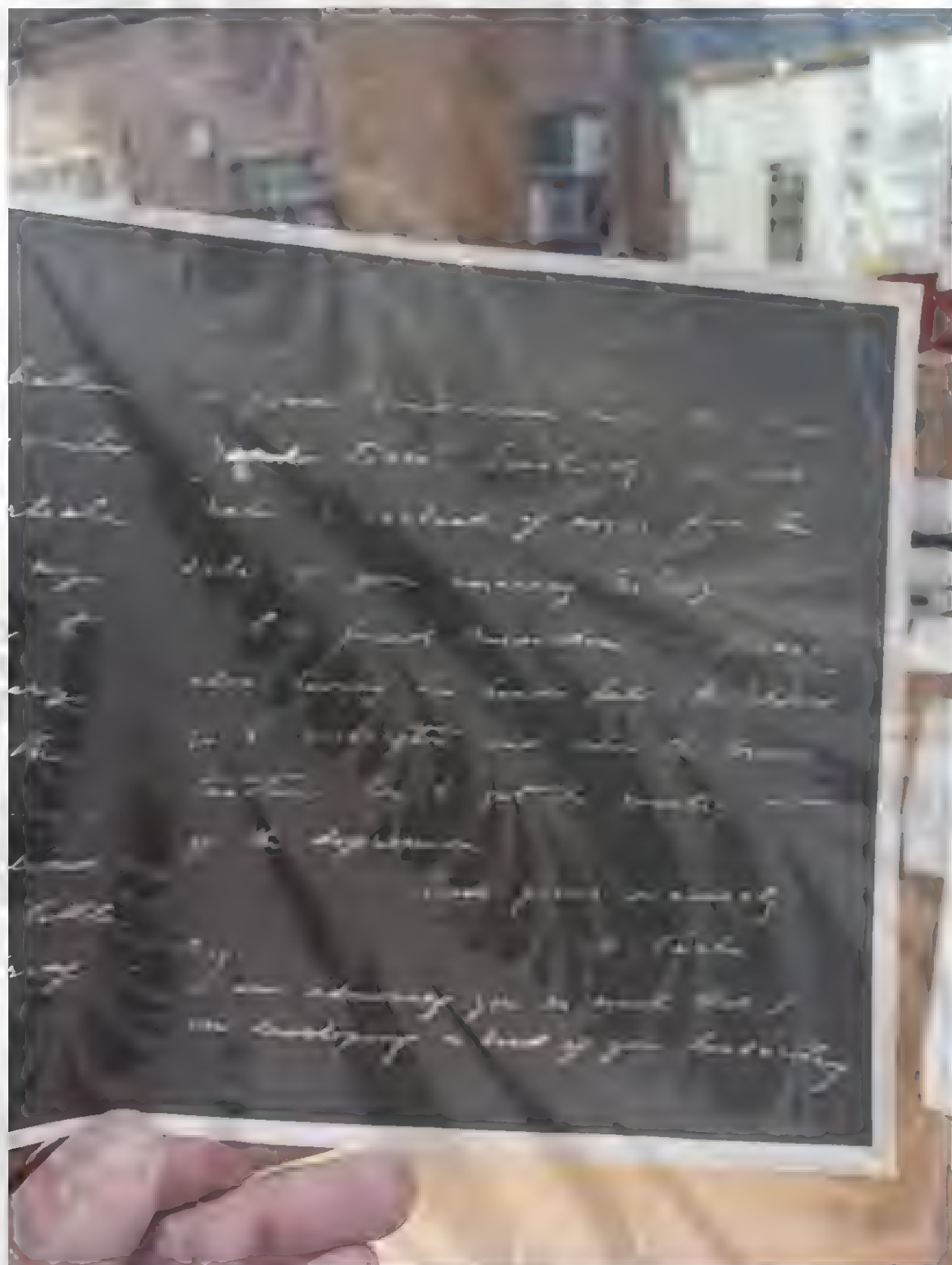
My dear Sir:

Thanking you for the
to the 4th and the 5th. I have
may not be held for many
it is not made your presence
pleasant and productive for
information. I am sure
stop along the way.

I am sure that the



piece of business in an letter
whether the a straggling is
the about in my a little. about
a disturbance and many a
experience in the a letter to
you the spirit of a man
that they will show I get it
message the right for a
some action that I am prepared
the subject of your committee a letter
of my communication with you



My dear friend
I hope you are well
and happy
and hope to hear from you soon

I hope you will excuse me for my silence and
negligence in acknowledging your always welcome letters. And
the circumstances which have been the cause of my late were quite
unavoidable

Under no circumstances I am at all sorry for my silence
which you did perfectly intended to correct. You did not get
sufficient information from me as our short talk and, besides,
the introduction would have placed me in a difficult position
as far as the subject of my own life was concerned

I am very sorry to hear that you are
unwell

With best regards to all

Yours very sincerely

W. T. Foster

C
O P O C
Y

July 6, 1936

Dr. Nikola Tesla
New York City

Dear Dr. Tesla:-

I wish to extend to you my congratulations on
your 80th Birthday, also to remind you of the pleasant year
that I spent with you, as your assistant during 1917, when
you were at the Pyle National Company in Chicago.

Yours for many more Happy Birthdays,

Walter W. Wilhelms
3500 East Blaine Street
Baltimore, Maryland

WWW:DFB

TUBE TALK

by Ted Hannah, K3CL

The year was 1936. In Europe, Hitler occupied the Rhineland, civil war erupted in Spain, and in England, Edward VIII gave up his throne, saying that he found it impossible to discharge his duties as king "without the help and support of the woman I love," Mrs. Wallis Warfield Simpson.

In America, Frank Capra won an Academy Award for directing "Mr. Deeds Goes to Town". Margaret Mitchell published *Gone With the Wind*, and the most expensive Ford automobile, the stylish convertible sedan, could be yours for \$780.

There were approximately 40,000 amateur radio operators in the United States in 1936, many of them using homemade transmitters and receivers, although some of the more affluent hams were using the new Hammarlund Super Pro receiver, the first of a long and illustrious line of Super Pros.

PB Prometheus Books

Y. I. Pulotta
(716-837-2475) Attention contact:

1203 Kensington Avenue
Buffalo NY 14211
Tel 716-437-2475
If not answered
716-437-0306

BOOK NEWS

NOTED CHICAGO LAWYER PUBLISHES BOOK ON VIOLENCE, LITERARY GENIUS
AND AMERICAN DEFENDERS OF NAZI GERMANY

1. NAME: [illegible]
2. ADDRESS: [illegible]
3. PHONE: [illegible]
4. EMAIL: [illegible]
5. OCCUPATION: [illegible]
6. DATE: [illegible]

Viereck's literary fame came to a quick end.

Viereck's literary fame came to a quick halt, however, when sympathy for his native country became a preoccupation in his writings. During World War I he was often accused of being traitorous. Later, as a highly paid journalist, Viereck interviewed such famous figures as Einstein, Mussolini, and Hitler. Viereck reported the latter and during World War II was imprisoned for issuing pro-Nazi propaganda. He died in 1942.

This engaging, first account of Viereck's life is written by Elmer Gertz, noted attorney for Nathan Leopold, Jack Ruby, and others. Viereck and Gertz were close friends for many years, despite their strong differences. They exchanged hundreds of fascinating letters, many of which are woven into this provocative study. This book takes an honest and revealing look at Viereck, as the first definitive biography of this enigmatic figure. Signer of a Barbarian is a much needed book. Of particular interest to poets, his friends, and social scientists, it will also enlighten the general reader.

Pl. "in Date March 27, 1931
ISB# - 77. -

EN ROUTE FOR WASHINGTON

On a trip from Atlanta to Washington, I wore both handcuffs
and footirons. The footirons were not even removed in bed.
It happened to be my Birthday, December 31st, 1944. Hence
these lines.

"When warclouds seemed to gather
I wrought a mighty spell,
Invoking Freedom's Father
And His Farewell.

And now with mock and frown
They drag me to my doom,
The city once his-town
And now his-tomb.

I am the dreg of dregs,
An Isolationist,
With iron on my legs
And on my wrist.

For those who will not kneel
Irons and handcuffs too:
This is a Savage Deal -
But is it New?

Through weary centuries
Since Cain his brother slew
These were the remedies
That tyrants knew.

I am your Lover true,
Land of the Brave, the Free.
Are handcuffs, irons too,
Your gift for me?

Handcuffs and irons too,
My Goddess, Liberty,
These shame and fetter you,
They shame not me.

While far from Washington
With soul and heart aching
At Anzio's beach, my son
Died in your name.

George Sylvester Viereck

(1) (40.0)

[illegible]

Tasks are not
 intended to be
 a direct
 driver of
 the

Nikola Tesla is the last of the Electric Age. Civilization has not been what it is today if it did not discover the Rotary magnet. He invented the rotary motor, and he described the venerable scientist as the inventor's inventor." Recently, on the occasion of his 80th birthday, both the Serbian and the Yugoslav Governments honored Tesla with high decorations.

In 1899, while experimenting with a wireless receiver of extraordinary sensitivity, I detected faint signals from Mars, our bother planet. I could not interpret the signals, but they seemed to suggest a numerical code, one - two - three - four. The Martians, I assumed, used numbers in their attempts to communicate with the Earth because arithmetic constitutes a universal language.

In my attempts to elucidate the problem of these impulses from outer space, I received ridicule instead of cooperation. Other, more practical, problems monopolized my attention, but the idea of experimenting with inter-planetary communications never ceased to intrigue me. One reason for

*These were had
a laboratory in N.J.*

severing my very pleasant relations with George Westinghouse and Thomas Edison, notwithstanding tempting propositions from both, was my desire to follow my own speculations in the great laboratory I built in New Jersey.

Some of my discoveries and inventions have made electric history. They were practical devices, susceptible of commercial exploitation. But my chief recreation was to study the universe, and the place of the earth in the starry system. Until man can talk in some manner with the inhabitants of other stars, he remains an earth-bound worm. My most recent discoveries, if verified by experience, will give wings to the earth-worm. To me, I trust, they will give abiding fame. The man who evolves a method of communicating with other planets, will be remembered in human annals after all present inventions are dipped in oblivion. I would willingly sacrifice all my other achievements to realize this dream. I am certain that I have found a solution theoretically beyond dispute.

I believe that my recent inventions, bearing upon this point, are more important than any of the seven hundred patents I previously gave to the world. Man reaches his maximum power in his old age, not in middle life. Every one should have a decade or so to sum up his life work after seventy-five. Every one would, if we lived sensibly. After man is seventy-five, he has gained so much experience that he can solve many problems that hitherto seemed insoluble. I hope, by systematizing my work and organizing the income and expenditure of my body with

*Test
exper.
to limit
140.
 $\frac{110}{15} = \frac{22}{3}$*

scientific precision, to reach the ripe age of 140. Long before that, communication with Mars and other stars will have become practicable.

I do not envisage an Inter-planetary Post Office or an Inter-planetary Telephone Central. An imaginative friend of mine suggests that it will be possible to pick up a Tesla phone, dial Mars 4211, and speak to a friend on a distant planet. That, for reasons that will presently appear, is beyond the range of possibility. But it will be possible to flash a message to Mars and to receive some response from intelligent entities there.

H. G. Wells, in an audacious short story, "Star-Begotten", advances the theory that the Martians, recognizing that they are living on a dying planet, are attempting to influence life on earth, with the object of reproducing themselves, so to speak metaphysically, in us. He insinuates that cosmic rays, directed from Mars, affect our genes, those carriers of human characteristics, and produce deviations in the human species important enough to create in time a new, more civilized human race.

I don't, very much, think that Tesla would make this mistake, in his sketch of cosmic rays when he attributed the influence of the sun to the earth.

Mr. Wells forgets to tell that Mars is 10,000 light years away from the earth. If rays from Mars are to affect the present generation of men, they must have been dispatched 10,000 years ago, when most of us were howling savages. Rays transmitted today (unless the Martians have anticipated my discovery) would affect men 10,000 years hence.

Wells was in his early middle age. The poem, from which you

Quote a Stagg Vidoeke Tesla was a firm believer in Newton's celestial mechanics, which includes Kepler's laws on planetary distances and periods. It would be impossible to fit a 10,000 L.Y. orbit for Mars into his laws.

If a man wanted to ring up Mars, he would have to wait 10,000 years or more, because sound travels more slowly than light, before his voice could reach a listening ear. Even if his voice traveled with the speed of light, it could not reach the party at the other end until the party making the call had been buried 10,000 years. Message and answer would fall on dead ears. That is one of the chief difficulties involved in inter-planetary communication. The movement of the stars, which makes it difficult for any impulse to reach a pre-defined spot, constitutes another difficulty.

Yet, I believe, that intelligent, sentient life exists on many planets, including Mars, and in universes revolving about suns more gigantic than ours. Mars in many respects resembles the earth, an earth grown old. It is logical to assume that the biological evolution of the Martians more or less parallels that of the human species, although they may have reached a stage far in advance of ours. Their perception of the external world must correspond more or less to ours. They see, smell, feel, hear, life through the same senses as we.

It is no strain on the imagination to assume some super-Tesla on Mars, perfecting at this very moment some new system of communication with us, since we have been deaf to all previous signals. But unless a revolutionary discovery enables the Martians and us to overcome the gap in time, both their and

our present civilization will have perished before a message from one star to another can reach its destination.

Theoretically it might be possible to create some self-perpetuating body of scientists that would keep its ear glued to an inter-stellar telephone for ten times ten centuries; practically I fear it is out of the question. New nations, new mountain-ranges, new oceans, may be born before the cloak of the universe registers another ten thousand years.

Communication between two planets involves two essential conditions:

- 1) Coincidence in Time
- 2) Similarity of Evolution.

To meet the first condition, we must flash our message, not with the speed of light, the fastest at present known to science but, to all intents and purposes, instantaneously. To meet the second condition, it is essential that the inhabitants of the planets, with which we desire to establish some contact, have reached a phase of evolution similar, or superior to ours. There can be no intelligible or intelligent intercourse between an Amoeba and a Goethe or a Shakespeare.

It is safe to assume that somewhere in the universe, probably on Mars, the prerequisites for an interchange of ideas exists. But how can we meet the first condition? -- to overcome the handicap of distance and time? We need a force that transmits our message with infinite velocity. Unfortunately, the velocity of every known ray, however fast, is finite.

In Text 5 -
discussion of
the transmission
of wireless waves
you will find a
gross error.
↓

He describes a component of his wave which moves
around the surface of the earth and attained infinite velocity
in traversing the first quadrant, while the same wave was moving
in a straight line at the velocity of light.

I believe that I have circumvented the difficulty.

My invention makes it possible to transmit enormous amounts
of energy through inter-planetary space and thousands of
light years with practical instantaneousity. With such a force
it is possible to dispatch signals that can be detected by
intelligent entities on other planets.

We need not flash the message directly to the other
planet; we might use the moon as our writing pad, and inscribe
our message on its pallid surface. The planetarians can re-
ply flash by flash to our communication, if they too have solved
-- as I think they must have -- the problem of instantaneous
transmission.

How?

The mathematics and physics are so intricate that it
is impossible to explain my plan in language intelligible to
the layman. For the present it must suffice to state that I
use a new kind of energy and the combined resources of thirty-
six highly technical inventions to beat the obstacle of time
and space. The description of these inventions, even in tech-
nical symbols, would take a great deal of space. Fortunately
the apparatus I have devised is small and compact. In spite
of its modest size, it can flash energy in considerable amount
through interstellar space without loss or dispersion.

Other men will have to collaborate with me to work out
the details of the plan for interplanetary communication. I
expect to confer with my friend George E. Hale, the most
of any distance from 1 and to 1000 miles. It would be a great gain
to have such a demonstration.

This was not discussed on
the moon is less than 3 light years
distant.

only on his own terms. In
the light of the above
the purpose of the above is
to get the same terms for it

In discussion, I feel that a
concerning the man as a common
man is substituted.

Putting a single spot in the dark area of the man is
much different than putting one in the light area, or
"pulled man" as stated above. Having the photo negative
is another misconception of the situation.

Tests made such a statement in his last "birthday" mass interview arranged by the press agent of the hotel at which he was staying, a statement that I got this week's newspaper. Also, I believe in a statement, which he should not have made in

astronomist of the Mount Wilson Observatory in Pasadena, California, who knows more about solar energy than any other human being, concerning the practical use of my apparatus in conjunction with his researches. In the meantime I shall submit to the Institute de France an accurate description of my devices, data and calculations, together with my claim for the prize of Fcs.100,000, offered by Pierre Guzman for the first communication with other worlds.

I am convinced that the prize will be awarded to me because, I repeat, the problem is solved. The money is a trifling consideration, but for the great historical honor of being the first mortal to achieve the miracle of a planetary communication I would be almost willing to give my life.

Tests was offered to Einstein's relativity and other theories as well as the "discovery" history of physicists. of his eye.

Relativists may object that my efforts will be thwarted by what Einstein calls "the curvature of space". My own investigations based on a new dynamic theory of gravity demonstrate conclusively that space is not curved. According to the Relativists, space is distorted into curves by the influence upon it of celestial bodies. But the law of cause and effect is immutable. Every action induces a reaction. If the planets act upon space, space in turn reacts upon the planets. If the planets pull space out into curves, the counter-pull of space upon the planets neutralizes the effect, and straightens out the curves. Inasmuch as action and reaction are coexistent, the supposed curvature of space is a figment of the mathematical imagination.

Tests failed to grasp the fundamental principle of Einstein's field theory.

Simple relativity is as old as
our earliest philosophical records

The relativity theory, by the way, is much older than its present proponents. It was advanced over two hundred years ago by my illustrious countryman Boscovich, the great philosopher who, not withstanding other and multifold obligations, wrote one thousand volumes of excellent literature on a vast variety of subjects. Boscovich dealt with relativity, including the so-called time-space-continuum, which enters into my calculations for inter-planetary calculations, masterfully and faultlessly. What he wrote was gold, compared with which the modern additions are dross.

My invention will carry my signals through space, curved or uncurved, with instantaneous precision. My statement will be attacked as fantastic. I am accustomed to that. It has happened to many of my ideas. But in most cases those who scoffed at first, eventually agreed with me -- if they lived long enough. I disagreed with Thomas Edison on the most effective electrical current. Edison championed the direct, I the alternating current. Events have justified my preference. Alternating currents are the life blood of industry today. Events will verify many of my predictions.

Even with our present limited knowledge, it is safe to venture certain prophesies. I visualize the whole earth as a huge brain in which before long all people will be able to communicate with each other through vest pocket radio equipments, sufficiently delicate to catch thought waves. Planes will be operated, newspapers printed, by wireless. Man will

tap the eternal heat reserves of Mother Earth to run his machines; he will tame Vesuvius as he has (with the aid of one of my inventions) Niagara.

Most of the changes enlisted will come, because man will be able to transmit power, power gained not only from the earth but from the motion of the stars, across vast distances; land, air and sea will be his carriers. All this is within sight of the present generation, the product of the imperfect human brain, but the imagination balks at the immense possibilities that will be open to man when, after perfecting my system of inter-planetary communications, he will be able to gather knowledge accuulated by intelligent beings on other stars.

*I admit that Tesla
was held the thought that
the incandescent stars are enlisted.*

As related by Tesla to Frank
and Luke Kerk

I EXPECT TO TALK TO MARS

by

Nikola Tesla

As Told To

George Sylvester Viereck.

Nikola Tesla is the last of the giants of the Electric Age. Civilization would not be what it is today if he had not discovered the Rotary Magnetic Field and invented the Rotary motor. His fellows describe the venerable scientist as the "inventor's inventor." Recently, on the occasion of his 80th birthday, both the Serbian and the Yugoslav Governments honored Tesla with high decorations.

In 1899, while experimenting with a wireless receiver of extraordinary sensitivity, I detected faint signals from Mars, our brother planet. I could not interpret the signals, but they seemed to ^{suggest} a numerical code, one-two-three-four. The Martians, I assumed, used numbers in their attempts to communicate with the Earth because arithmetic constitutes a universal language.

In my attempts to elucidate the problem of these impulses from outer space, I received ridicule instead of co-operation. Other, more practical, problems monopolized my attention, but the idea of experimenting with inter-planetary communications never ceased to intrigue me. One reason for

severing my very pleasant relations with George Westinghouse and Thomas Edison, and the resulting financial straits from both, was my desire to follow my own speculations in the great laboratory I built for myself in New Jersey.

Some of my discoveries and inventions have made electric history. They were practical devices, susceptible of commercial exploitation. But my chief recreation was to study the universe, and the place of the earth in the starry system. Until man can talk in some manner with the inhabitants of other stars, he remains an earth-bound worm. My most recent discoveries, if verified by experience, will give wings to the earth-worm. To me, I trust, they will give abiding fame. The man who evolves a method of communicating with other planets, will be remembered in human annals after all present inventions are dipped in oblivion. I would willingly sacrifice all my other achievements to realize this dream. I am certain that I have found a solution theoretically beyond dispute.

I believe that my recent inventions, bearing upon this point, are more important than any of the seven hundred patents I previously gave to the world. Man reaches his maximum power in his old age, not in middle life. Every one should have a decade or so to sum up his life work after seventy-five. Every one would, if we lived sensibly. After man is seventy-five, he has gained so much experience that he can solve many problems that hitherto seemed insoluble. I hope, by systematizing my work and organizing the income and expenditure of my body with

Scientific precision, to reach the ripe age of 140. Long before that, communication with Mars and other stars will have become practicable.

I do not envisage an Inter-planetary Post Office or an Inter-planetary Telephone Central. An imaginative friend of mine suggests that it will be possible to pick up a Radio phone, dial Mars 2211, and speak to a friend on a distant planet. That, for reasons that will presently appear, is beyond the range of possibility. But it will be possible to flash a message to Mars and to receive some response from intelligent entities there. H. G. Wells, in an audacious short story, "Star-Begotten", advances the theory that the Martians, recognising that they are living on a dying planet, are attempting to influence life on earth, with the object of reproducing themselves, as to great anthropologists, in us. He insinuates that cosmic rays, directed from Mars, affect our genes, those carriers of heredity characteristics, and produce deviations in the human species important enough to create in time a new, more civilised human race. Mr. Wells forgets to tell that Mars is 10,000 light years away from the earth. If their rays were to affect the present generation of men, they must have been dispatched 10,000 years ago, when most of us were howling savages. Rays transmitted later (unless the Martians have anticipated my discovery) would affect men 10,000 years hence.

If a man wanted to ring up Mars, he would have to wait 12,000 years or more, because sound travels more slowly than light, before the voice could reach a listening ear. Even if his voice traveled with the speed of light, it would not reach the party at the other end of the line until the party making the call had been buried 10,000 years. Message and answer would fall on deaf ears. That is one of the chief difficulties involved in interplanetary communication. The movement of the stars, which makes it difficult for any impulse to reach a pre-defined spot, constitutes another difficulty.

Yet, I believe, that intelligent, sentient life exists on many planets, including Mars, and in universes revolving around suns more gigantic than ours. Mars, it is generally believed, in many respects resembles the earth, an earth grown old. It is logical to assume that the biological evolution of the Martians more or less ^{parallels} resembles that of the human species, although they may have reached a stage far in advance of ours. Their perception of the external world must correspond more or less to ours. They see, smell, feel, hear, life through the same senses as ^{we} ~~man~~. It is no strain on the imagination to assume some super-Tesla on Mars, perfecting at this very moment some new system of communication with us, since we have been deaf to all previous signals. But unless a revolutionary discovery enables the Martians and us to overcome the gap in time, both their and our present civilization will

have perished before a message from one star to another can reach its destination.

Theoretically it might be possible to create some self-transmitting body of substance that would carry its own plant to an inter-stellar telephone for ten times ten centuries; practically I fear it is out of the question. New nations, new mountain-ranges, new oceans, may be born before the clock of the universe registers another ten thousand years.

Communication between two planets involves two essential conditions:

- 1) Coincidence in Time
- 2) Similarity of Evolution.

To meet the first condition, we must flash our message, not with the speed of light, the fastest at present known to science but, to all intents and purposes, instantaneously. To meet the second condition, it is essential that the inhabitants of the planets, with which we desire to establish some contact, have reached a phase of evolution similar, or superior to ours. There can be no intelligible or intelligent intercourse between an Aeneas and a Goethe or a Shakespeare.

It is safe to assume that somewhere in the universe, probably on Mars, the prerequisites for an interchange of ideas exists. But how can we meet the first condition? -- in overcoming the barrier of distance and time? We need a force that transmits our message with infinite velocity. Unfortunately, the velocity of every known ray, however fast,

is finite. *I* believe that I have circumvented the difficulty. My invention makes it possible to transmit enormous amounts of energy through inter-planetary space and thousands of light years with practical instantaneity. With such a force it is possible to dispatch signals that can be detected by intelligent entities on other planets - now.

We need not flash the message directly to the other planet; we might use the moon as our writing pad, and inscribe our message on its pallid surface. The planetariums ^{could} reply flash by flash to our communication, if they too have solved -- as I think they must have -- the problem of instantaneous transmission.

How?

The mathematics and physics are so intricate that it is impossible to explain my plan in language intelligible to the layman. For the present it must suffice to state that I use a new kind of energy and the combined resources of thirty-six highly technical inventions to beat the obstacle of time and space. The description of these inventions, even in technical symbols, would take a great deal of space. Fortunately the apparatus I have devised is small and compact. In spite of its modest size, it ^{uses} flashes energy in considerable amount through interstellar space without loss or dispersion.

Other men will have to collaborate ^{with me} to work out the details of the plan for interplanetary communication. I expect to confer with my friend George E. Hale, the great astronomer

of the Mount Wilson Observatory in Pasadena, California, who
knows more about other worlds than any other known person, and
serving the practical use of my discovery in conjunction with
his researches. In the meantime I shall submit to the In-
stitute de France an accurate description of my results, data
and calculations, together with my claim for the prize of
Fcs.100,000, offered by Pierre Guzman for the first communi-
cation with other worlds. ¶ I am convinced that the prize will
be awarded to me because, I repeat, the problem is solved.
The money is a trifling consideration, but for the great his-
torical honor of being the first mortal to achieve the miracle
of a planetary communication I would be almost willing to give
my life. ~~For this greatest triumph in history~~

Relativists may object that my efforts will be thwarted
by what Einstein calls "the curvature of space". My own inves-
tigations based on a new dynamic theory of gravity demonstrate
conclusively that space is not curved. According to the Rela-
tivists, space is distorted into curves by the influence upon
it of celestial bodies. But the law of cause and effect is
action induces a reaction. ~~Every~~ If the planets pull upon space,
space in turn reacts upon the planets. If the planets pull
space out into curves, the counter-pull of space upon the
planets neutralizes the effect, and straightens out the curves.
Inasmuch as action and reaction are coexistent, the supposed
curvature of space is a figment of the mathematical imagin-
tion.

The relativity theory, by the way, is much older than

the present moment. It has advanced over the centuries
from the days of primitive superstition through the ages
of discovery and invention to the present day. It has
grown from the simplest sciences of ancient times
to a vast variety of subjects. Science deals with matter,
with the physical properties of matter, with the
mathematics of the universe, with the inter-planetary calculations,
with the laws of electricity. What he wrote was gold, compared
with what the modern scientists are doing.

My invention will carry us through space,
through the clouds, into the atmosphere. My invention
will be attached to the earth. I am accustomed to that.
It has happened to many of my ideas. But in most cases those
who scoffed at first, eventually agreed with me — if they
lived long enough. I disagreed with Thomas Edison on the
most effective electrical current. Edison championed the
direct, I the alternating current. Events have justified my
preference. Alternating currents are the life blood of in-
dustry today. Events will verify many of my predictions.

Even with our present limited knowledge, it is safe
to venture certain prophecies. I visualize the whole earth
as a huge brain in which before long all people will be able
to communicate with each other through vest pocket radio equip-
ments, sufficiently delicate to catch thought waves. Planes
will be operated, newspapers printed, by wireless. Man will
tap the eternal heat reserves of Mother Earth to run his ma-
chines; he will tame Vesuvius as he has (with the aid of one

of my inventions) Niagara.

Most of the changes enlisted will come, because man will be able to transmit power, power gained not only from the earth but from the motion of the stars, and across vast distances; land, air and sea will be his carriers. All this is within sight of the present generation, the product of the imperfect human brain, but the imagination balks at the immense possibilities that will be open to man when, after perfecting his system of inter-planetary communications, he will be able to gather knowledge accumulated ^{by intelligent beings} on other planets.

WESTINGHOUSE
ELECTRIC & MANUFACTURING COMPANY



FROM New York

DATE January 3, 1939

SUBJECT Nicoli Tesla

~~Pittsburgh,
Mr. S. B. Roberts,
Assistant to Vice President
International Relations~~

I called upon Mr. Tesla last evening at the Hotel New Yorker, where he occupies room 3327. I got him in the telephone from the Hotel office. He said he was not seeing anyone at present but he was profuse in his thanks for my calling and he waited for ten minutes. He said he had been badly injured by an automobile nine months ago and was slowly recovering from his injuries. He is 83 years old.

He appeared to be thoroughly clear-headed, in fact said that since his accident his mind seemed to be clearer than ever. He said he was about ready to write to our Chairman Mr. Robertson about our Company taking up with an invention or conception and he pronounced the most valuable work he had ever done; that other people wanted to go into it, but he retained his loyalty for Westinghouse and thought he should have the first chance. So our Chairman may hear from him.

I have no doubt your totally competent ones are reaching him. Of course I had no way of ascertaining his financial condition. He said that he was walking around his room. Certainly his voice sounded ardent and enthusiastic as it was 35 years ago. The Hotel Assistant Manager told me that he was occasionally seen about the Hotel, but remained most of the time in his room and apparently saw no one. He said that Mr. Tesla might not answer my telephone call, but he did, with the above result.

Mr. Tesla promised to let me know when he was able to see me. This, of course, was after my saying that I called in behalf of his many Westinghouse friends who wanted to know how he was and also to renew my own pleasant acquaintance with him. So I cannot tell whether his desire not to have me come up was due to his not wishing to be disturbed or whether one of pride in not being sufficiently presentable. I will take a chance of calling him up again a little later.

I rather imagine his financial resources are rather meagre, for he probably never knew how to use money. I remember walking down the street with him one day when he stopped at a newsstand, picked up half a dozen magazines and newspapers, pulled a big roll of bills out of his outside overcoat pocket, handed the top bill to the newsman and walked along with me. At that time he was living at the old Waldorf. This was during the period when he was building the Radio station at Gardencliff, L.I. for which I sold him some \$75,000 worth of apparatus. He was then being financially backed by John Jacob Astor and some other wealthy people. That would have been about 1902. I have not seen him since. My impression in those days was that his ideas were extremely unpractical, for he

Mr. E. B. Roberts

-2-

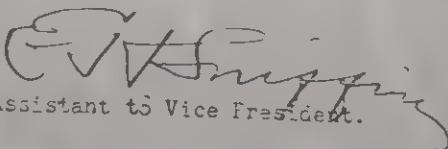
1/3/39

talked so far over my head that he was not convincing. However, I kept some reservation, as I remembered what he once did for us.

He said last evening that in the last six months he had received honorary degrees from 22 different Universities in different parts of the world.

I return herewith the correspondence accompanying your letter of December 29th.

EHSniffin:FM


Assistant to Vice President.

WHO'S WHO IN AMERICA (Vol. 21) 1940-1941

NOTE:

1. The card is to be filled out by the person who is the subject of the card.

2. The card is to be filled out by the person who is the subject of the card.

3. The card is to be filled out by the person who is the subject of the card.

WHO'S WHO IN AMERICA

1940-1941

1. The card is to be filled out by the person who is the subject of the card.

2. The card is to be filled out by the person who is the subject of the card.

3. The card is to be filled out by the person who is the subject of the card.

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9. The card is to be filled out by the person who is the subject of the card.

10. The card is to be filled out by the person who is the subject of the card.

THE CARD IS TO BE FILLED OUT BY THE PERSON WHO IS THE SUBJECT OF THE CARD.

1. The card is to be filled out by the person who is the subject of the card.

2. The card is to be filled out by the person who is the subject of the card.

3. The card is to be filled out by the person who is the subject of the card.

4. The card is to be filled out by the person who is the subject of the card.

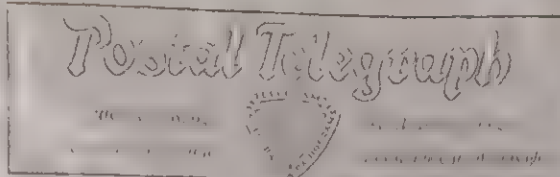
5. The card is to be filled out by the person who is the subject of the card.

NOTE: Should it be found on the case sketch that he living will be put at risk with a case sketch may fail kindly return it immediately and at the same day of return.

1. The card is to be filled out by the person who is the subject of the card.

Please send the card to the Home Address or the business Address.

STATION INDICATED
RECEIVED AT
TELEPHONE OUR LEGATION TO CENTRAL TELEGRAPH



THIS IS A TELETYPE TELEGRAM
GRAM OR RADIOGRAM. SYMBOLS OF COUNTRY
INDICATED BY FLAG IN THE PLAIN
OR IN THE FIRST LETTER OF THE MESSAGE
SYMBOLS INDICATING TONY OF COUNTRY
ARE OUTLINE IN THE COMPANY'S TARIFFS
ON HAND AT EACH OFFICE AND ON FILE WITH
REGULATORY AUTHORITIES

Form 1

C38 30-NO NEWYORK NY 615P NOV 21 1940

M M DUCICH= /

RESIDENCE GARY 81540 GARY IND:

=OPROSTITE NIJE MI BILO MOGUCE ODMAH PRIZNATI VASU PLEMERITU
POMOC. SVETI NIKOLA I VI NAJBOLJI SU MOJI PRIJAATELJI. ZELIM VA
I OBITELJI NAJVECE ZADOVOLJSTYO PRILIKOM DANASJEG PRAZNIKA.
VAS ZAHVALNI DUZNIK=

NIKOLA TESLA.

POSTAL TELEGRAPH

104 E. 5th Ave.
Gary, Ind.
Tel. 2-2153

C38 30-NO New York, N.Y. 615P Nov 21 1940

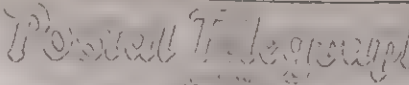

M M DUCICH 1100 Mass. Cloverleaf Dairy
Residence Gary 81540 Gary, Ind.

FORGIVE ME, IT WASN'T POSSIBLE FOR ME TO RECOGNIZE YOUR GENEROUS HELP
IMMEDIATELY. ST. NICHOLAS AND YOU ARE MY BEST FRIENDS. TO YOU AND TO YOUR
FAMILY I WISH THE BEST SATISFACTION ON THE OCCASION OF TODAY'S HOLIDAY.

YOUR GRATEFUL DEBTOR,

NIKOLA TESLA.

STANDARD TELEGRAPH
RECEIVED AT
DATE
TIME
TO
FROM
BY

<i>Personal Telegram</i>	
	
	

THIS IS A FULL RATE TELEGRAM. CABLE GRAM OR RADIOGRAMS ARE OTHERWISE INDICATED BY SYMBOLS IN THE PREVIOUS OR THE ADDRESSEE OF THE MESSAGE. SYMBOLS DESIGNATING RATE OF DELIVERY ARE OUTLINED IN THE COMPANY'S TABLES ON HAND AT EACH OFFICE AND ONLY AS WITH REGULATORY AUTHORITIES.

033 30-40 NEW YORK NY 615P NOV 21 1940

W V D C I C H E

PRESIDENCE GARY 81540 GARY IND

=OPROSTITE NIJE MI BILO MOGUCE ODMAH PRIZNATI VASU PLEVENITOST
 POMOC. SVETI NIKOLA I VI NAJBOLJI SU VOJI PRIJATELJI. ZELIM VAM
 ! OBITELJI NAJVECE ZADOVOLJSTVO PRILIKOM DANASJEG PRAZNIKA
 VAS ZAHVALNI DUZNIK=

NIKOLA TESLA.

POSTAL TELEGRAPH

101 W. 54th Ave.
 New York, N.Y.
 Tel. 2-2113

033 30-40 New York, N.Y. 615P Nov 21 1940

H. H. Dugan 1100 Mass. Cloverleaf Dairy
 Residence Gary 81540 Gary, Ind.

FORGIVE ME, IT WASN'T POSSIBLE FOR ME TO RECOGNIZE YOUR GENEROUS HELP
 IMMEDIATELY. ST. NICHOLAS AND YOU ARE MY BEST FRIENDS. TO YOU I OWE YOUR
 FAMILY I WISH THE BEST SATISFACTION ON THE OCCASION OF TODAY'S HOLIDAY.

YOUR GRATEFUL DEBTOR,

NIKOLA TESLA.

WESTERN
UNION

(50)

The following is a list of the names and addresses of the persons who have received this message. The time of receipt is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

1941 JAN 15 PM 3 55

0151 47-NH NEWYORK NY 15 412P

MIROLO M DUCICH

CLOVERLEAF DAIRY CO.

DOBRO SAM SINOC STO DVADESET PET I JUTROS CETIRI STOTINE
PEDESET ZAHVALJUJE VAM OD SVEG SRCA NA VASOJ PLEMENITOJ
POMOZI CEKOVE CU SLATE CIM DOBYEM MOZEBITE BEZE NEGO SAM
CEKLAN PER CU PRINATI KOVACA SA DRUGE ISTRANE SELECI VAM
ZDRAVCE I SRETA I PUT OSTAJEM VAS VECITI DUZNIK=
NIKOLA TECLA.

THE COMPANY WILL ACCEPT SUGGESTIONS FROM ITS CUSTOMERS

144
144
144

WESTERN UNION (70)

0151 47-NH New York N.Y. 15 412P

1941 JAN 5 PM 3 55

MIROLO M DUCICH

DOBRO SAM SINOC STO DVADESET PET I JUTROS CETIRI STOTINE
PEDESET ZAHVALJUJE VAM OD SVEG SRCA NA VASOJ PLEMENITOJ
POMOZI CEKOVE CU SLATE CIM DOBYEM MOZEBITE BEZE NEGO SAM
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ZDRAVCE I SRETA I PUT OSTAJEM VAS VECITI DUZNIK=
NIKOLA TECLA.

NIKOLA TECLA.

10-11-40



T. S. A. Nola A. 107
with Thomas E. 107
of 107

16-17-40



HOTEL NEW YORKER
THIRTY FOURTH STREET AT EIGHTH AVENUE NEW YORK

66

3-6-41



HOTEL NEW YORKER

THIRTY-FOURTH STREET AT EIGHTH AVENUE, NEW YORK

March 6, 1941

...the principle of the...
...and electric...
...machinery...
...used \$2.00 which...
...previous 50 cents...
...credit... Fine condition...
...\$1.50-\$3.00

12 31 -40



HOTEL NEW YORKER

THIRTY IN A SUITE AT EIGHT WEEKS

413

RECEIVED, NEW YORK
J. D. B. & CO. 100 N. 3RD ST. N. Y. C.

March 2 1912

Dear Sir,

I have thought that the quantity of vegetables may be increased to 112 lbs. per cow.

Furthermore, I have also included a few doubtful items.

On this supposition I give the relative weights of the components and their protein value on the next page.

Total weight of vegetables		1312
Total weight of eggs		1312
Total weight of vegetables		1312
Carrots - 1/2 lb. whole	2 ounces	0.12
Broccoli - 1/2 lb. whole	24 "	2.40
Parsnips	8 "	0.60
Carrots - 1/2 lb. whole	12 "	1.20
Turnips	8 "	0.60
White potatoes	12 "	1.50
Sweet potatoes -	12 "	1.50
Spinach	12 "	1.73
Fresh tomatoes -	8 "	0.60
White turnips -	12 "	0.82
Lettuce heart -	4 "	0.30
Taproot -	4 "	0.52

Total weight of vegetables 1312
 Protein total 1312
 equal to about 13 eggs



THIRTY FIFTH STREET AT FIFTH AVENUE NEW YORK

HOTEL NEW YORKER

OCTober 31st 1942

From Dr. Nikola Tesla Rooms 3327-28

Telephone Medaillon 3-1000

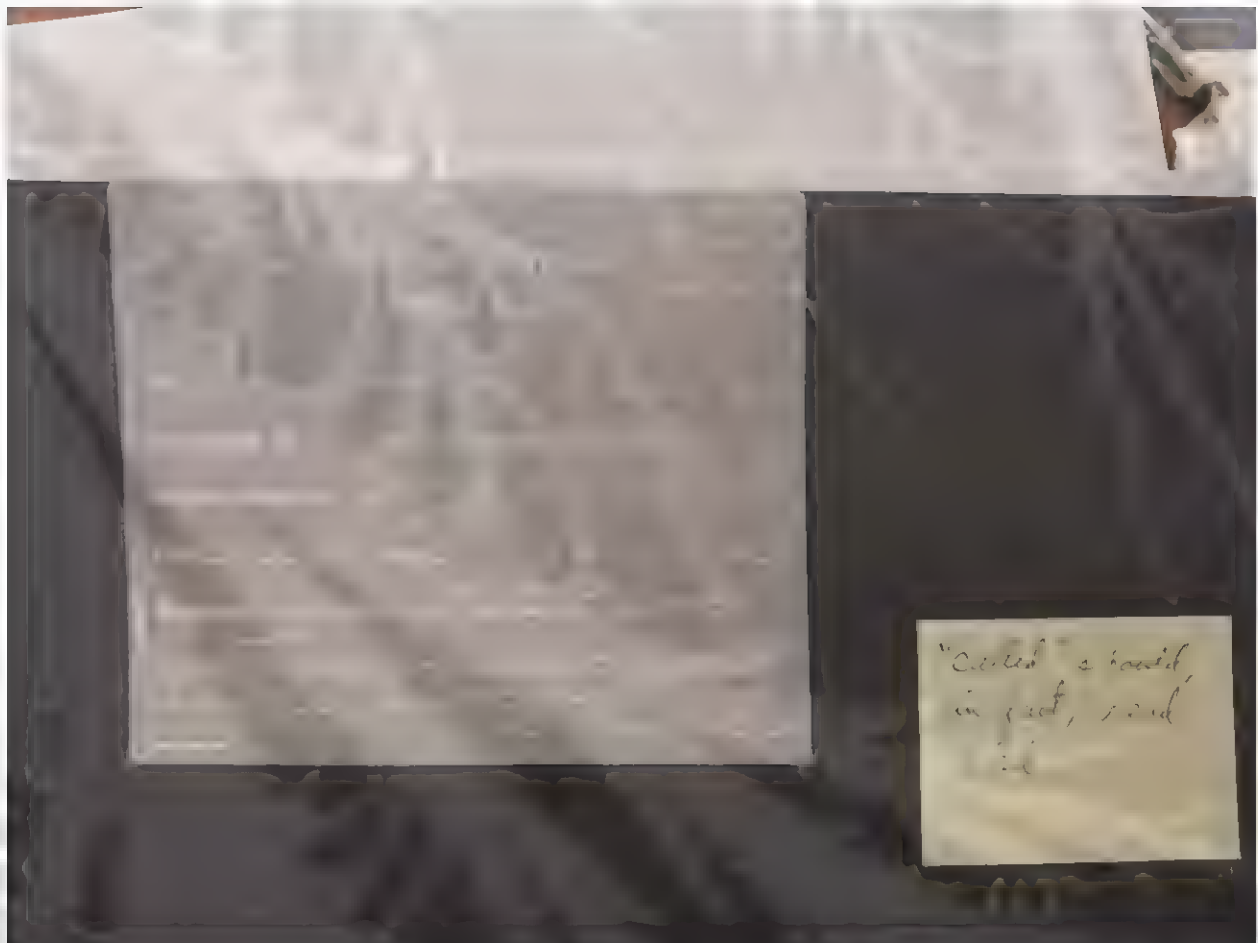
Delivered to

inclosing \$5⁰⁰

Part for all service

Sous-Chef to-night

Main Kitchen Hotel New Yorker



WESTERN
UNION

THE

1. The first step in the process of identifying a problem is to define the problem. This involves identifying the symptoms of the problem and determining the scope of the problem.

8598

WESTERN UNION

MEMBERS EARLY
CHIEFMAN OF THE BOARD

See any Western Union agent for details

10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

20 NEW YORK NY JAN 9. 1940

PAUL RADSBAYNE VICE

NEW YORK UNIVERSITY NY

IN VIEW OF NICOLA TESLA'S ENORMOUS CONTRIBUTIONS TO SCIENCE AND INDUSTRY
YOU WILL UNDOUBTEDLY SHARE THE SENSE OF LOSS AND SYMPATHY THE WORLD MUST
FEEL AT HIS PASSING. WILL YOU SERVE AS AN HONORARY PALLBEARER AT THE

FUNERAL SERVICES TO BE HELD AT CATHEDRAL OF ST JOHN THE DIVINE ON
TUESDAY JANUARY 9 AT FOUR PM. WE TAKE THE LIBERTY OF SENDING THIS
MESSAGE BEFORE NOON ON MONDAY AT LEAST 8-0256

U59P



One of the many slips that Tesla continually placed around his hotel rooms.

Picked up by Kenneth Swezey upon entering Tesla's rooms at the Hotel New Yorker following his death.

Received from Swezey January 13, 1955.

1900-1910
1911-1920
1921-1930
1931-1940
1941-1950
1951-1960
1961-1970
1971-1980
1981-1990
1991-2000
2001-2010
2011-2020
2021-2030
2031-2040
2041-2050
2051-2060
2061-2070
2071-2080
2081-2090
2091-2100

One of the many slips that Tesla continually placed around his hotel rooms.

Picked up by Kenneth Swezey upon entering Tesla's rooms at the Hotel New Yorker following his death.

Received from Swezey January 13, 1955.

WESTERN UNION

NEW YORK NY 805P JAN 11 1943

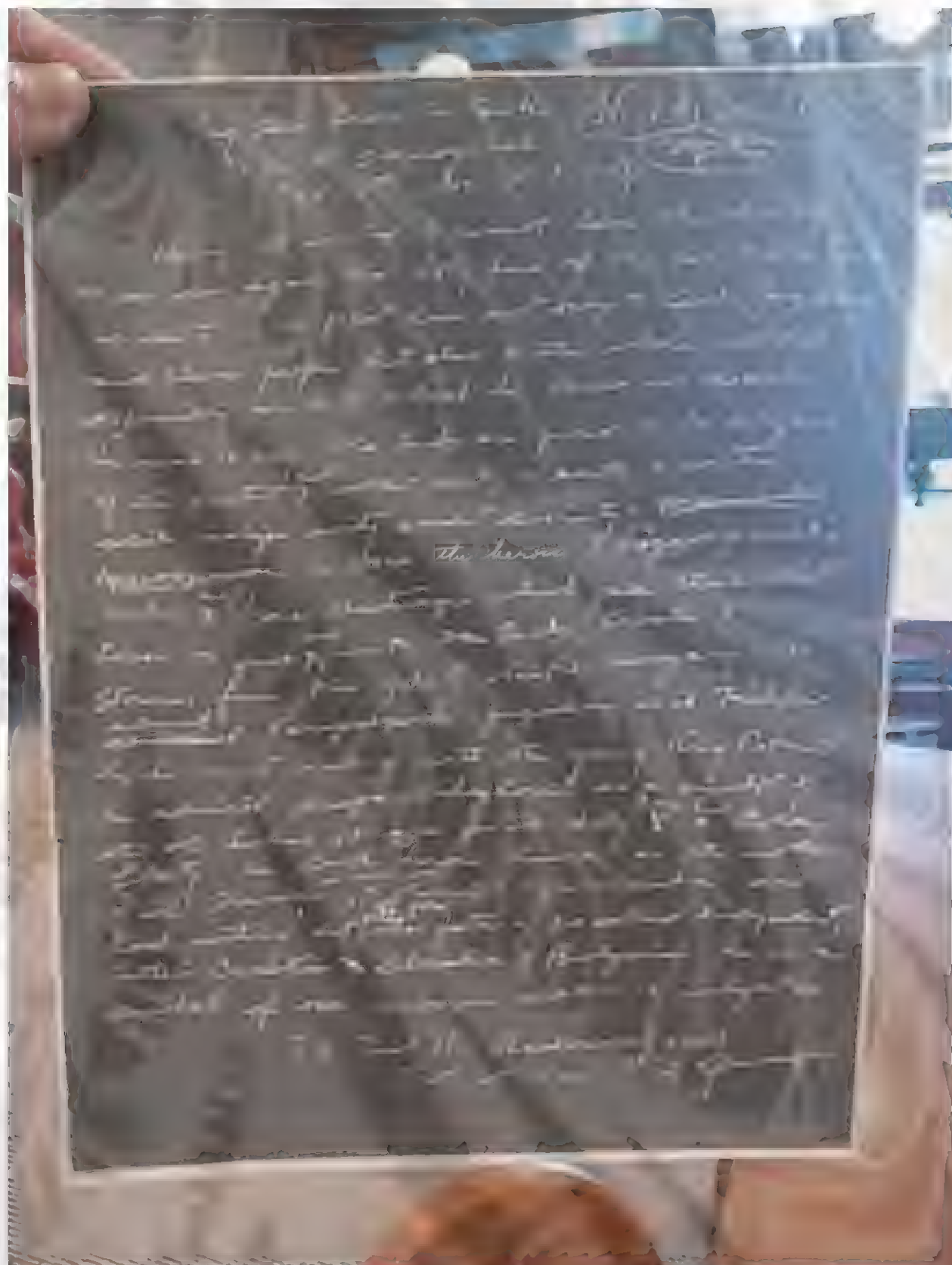
FROM PAUL RADOJAWCZYCH

TO YORP & HAVS-117 NYK

IN AMERICA (RADIO)

LAST 40 THE GENERAL GATES FROM WHOM THE CATHEDRAL AND ST. PAUL
CATHEDRAL WHERE SERVICES WILL BE HELD FOR THE FIRST TIME
INFORMATION KINDLY CALL ME AT 1177 NYK

PAUL RADOJAWCZYCH



(Composition of Telegram)
(Night, Jan. 12, 1943)

Yugoslav Govern. in Exile

% Dr. M. Stanoyevich

74 - 5th Ave. N. Y. City

Being ill in bed I cannot have the honor
to see once again the holy face of our Dr. Nikola Tesla.
His death is a great loss not only to Serbs, Yugoslavs
and Slavic people, but also to the whole world
especially our U. S. which he loved so dearly.
He used to say, "We Serbs are proud to be citizens
of the greatest & noblest country on earth, a country
which realizes unity amidst diversity," to use his
own expression. He loved the heroic Karageorgevich's
Serbia & brave Montenegro which gave their last
blood to free & unite the Serbs, Croats &
Slovanes from the yoke of Austro-Hungary. He
admired
~~considered~~ Karageorgevich's Yugoslavia as is testified
by his recent meeting with the young King Peter II.
He admired Praca Mihajlovich as a symbol of
the old Serbian struggle for the Holy X & Golden
Liberty. He loved heroic Russia as the mother
of all Slavdom, Poland & Czechoslovakia and
had nothing but pity for the fate of so called independent,
Hitler's Croatia & Slovakia & Bulgaria. He is a
symbol of our modern culture & civilization.

Dr. Paul R. Radosavljevich

Prof. at New York University





National Home Offices
CROATIAN FRATERNAL UNION
Pittsburgh, Pennsylvania

ZAJEDNICAR

— ENGLISH SECTION —

Established November 8, 1929. Published weekly
By The

Croatian Fraternal Union Of America

STEPHEN F. BRKICH, English Editor

Editorial Offices, 3441 Forbes Avenue, Pittsburgh 13, Pa.
Telephones: MUseum 2-4470 — 2-4471

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WEDNESDAY, OCTOBER 26, 1960

Adam Sudetic

THE PASSING Oct. 10, 1960, in Detroit of Adam Sudetic marked the end of an era in the annals of the English Section of the Society's Official Organ.

Gone is the man who was to enrich these pages the past five years by contributing a historic series of articles dealing with the lives and works of Nikola Tesla, he of immortal fame in the scientific world, and Vlaho Bukovac, the greatest Croatian artist of all time.

In submitting his articles for publication in the English Section, bro. Sudetic was always wont to "apologize" for his loose usage of the English language, a habit he attributed to the fact that he was a "self-educated American."

But his vast knowledge of such men as Tesla and Bukovac — he was an authority on both of them — far overshadowed his constant battle with the English language.

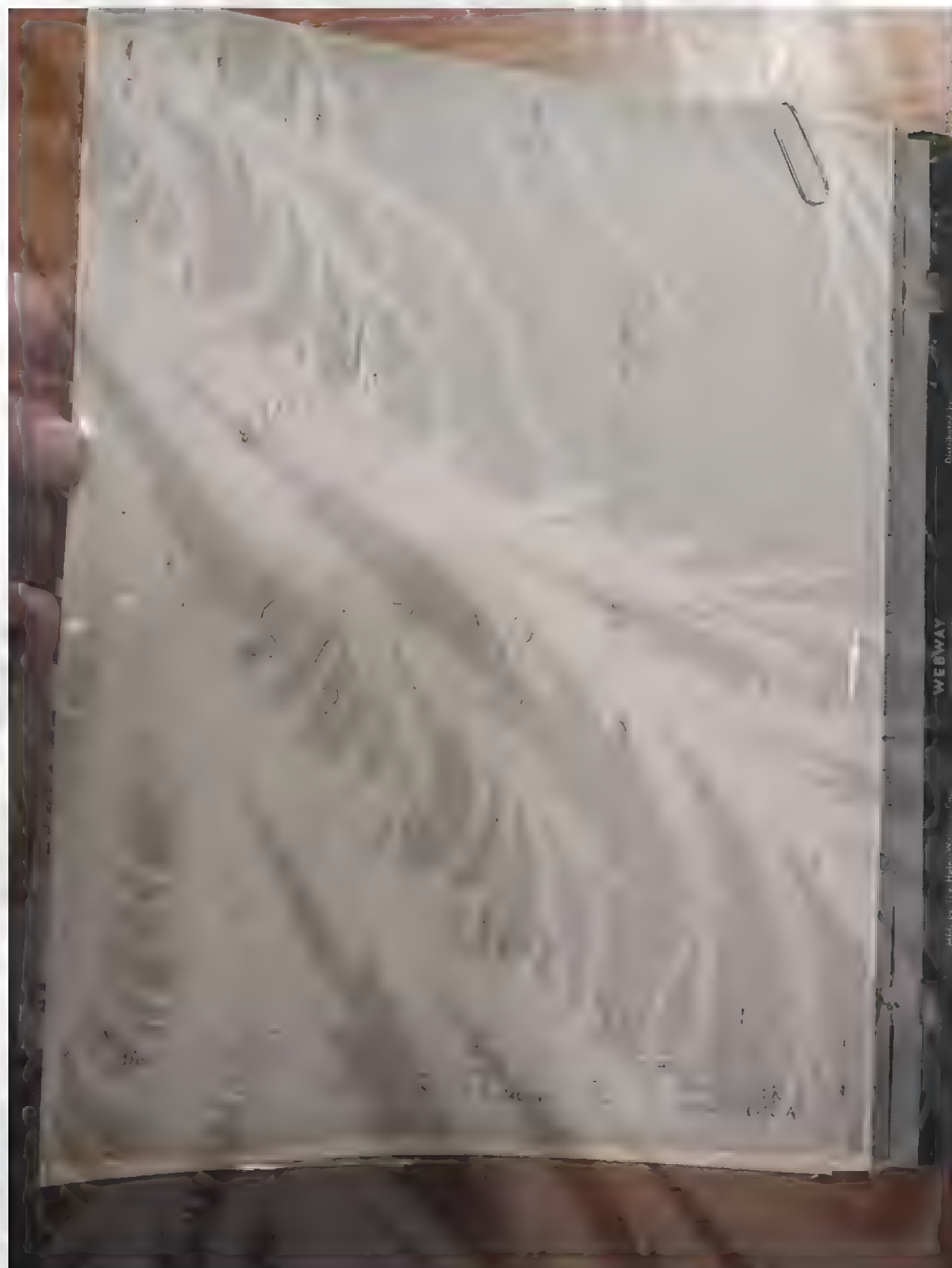
As it was, bro. Sudetic had nothing to apologize for in the end.

★ ★ ★

To Island Dist. Indorse
Don Quixote Reading
Box 4418-30-

DEATH MASK
OF
NIKOLA TESLA
1856 — 1943







One of Nikola Tesla's
gummed seals illustrating
an oscillator of
his invention designed
for the production of
ozone.

AUTOGRAPH MANUSCRIPTS
of
Nikola Tesla

Vol. I

NEGATIVE PHOTOSTAT ITEMS IN THESE
VOLUMES ARE FROM THE COLLECTION
OF LILLIAN MCCHESENEY, BALDWIN, L.I.



One of Nikola Tesla's
gummed seals illustrating
an oscillator of
his invention designed
for the production of
ozone.



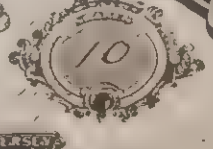
CAPITAL \$300,000

3,000 SHARES

SHARES \$100 EACH

The Tesla Electric Light and Manufacturing Co.

OF RAHWAY, NEW JERSEY



INCORPORATED UNDER THE LAWS OF THE STATE OF NEW JERSEY

COPIES SIGNED & REGISTERED
in day of 1886

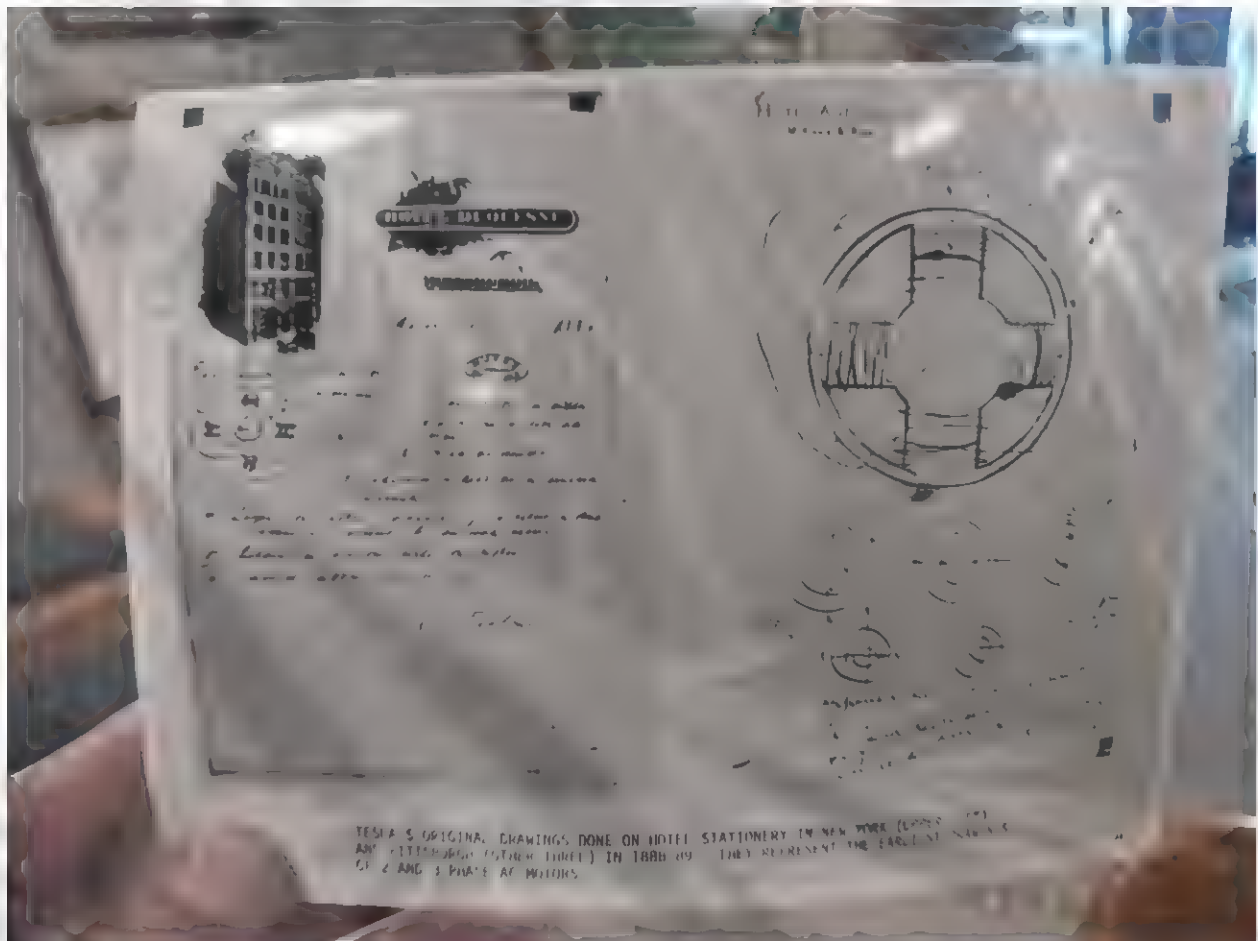
THOMAS F. CORMAN

This is to Certify that Thomas F. Corman
is entitled to 64 Shares of the Capital Stock
of The Tesla Electric Light and Manufacturing Company, trans-
ferable only on the books of the Company, in person or by Attorney, on
surrender of this certificate, Rahway, N.J. February 2nd 1886

Thomas F. Corman
TREASURER

John A. Smith
PRESIDENT

THEir PAID AND UNASSESSABLE







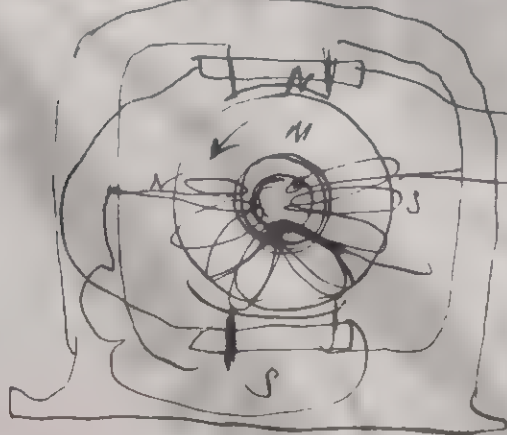
F. T. KEITH, MANAGER



BROADWAY
BARCLAY
& VESSEY
STREETS

Feb. 2 1891

Ed. Quaker Mission



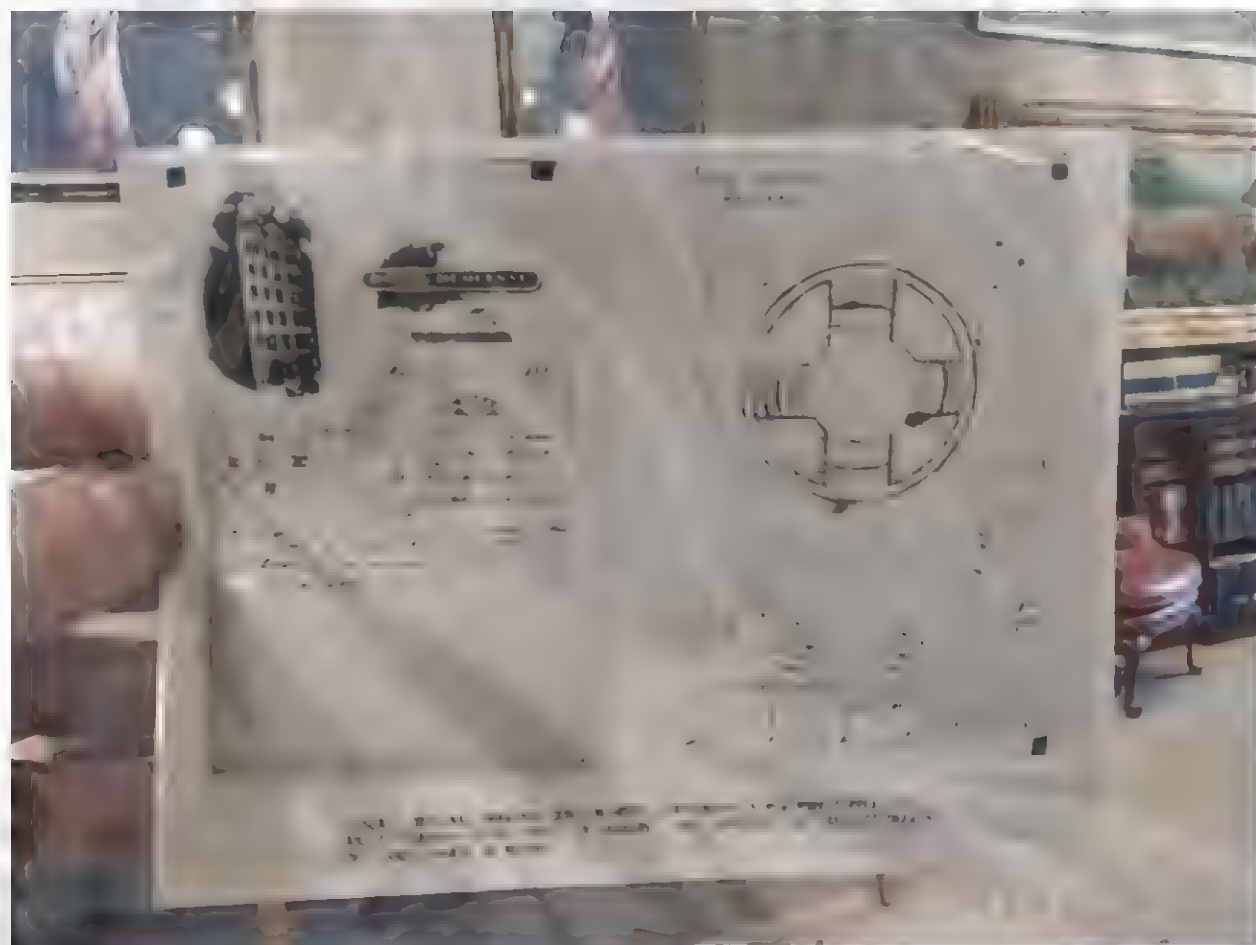
Terminals
Source of
Current

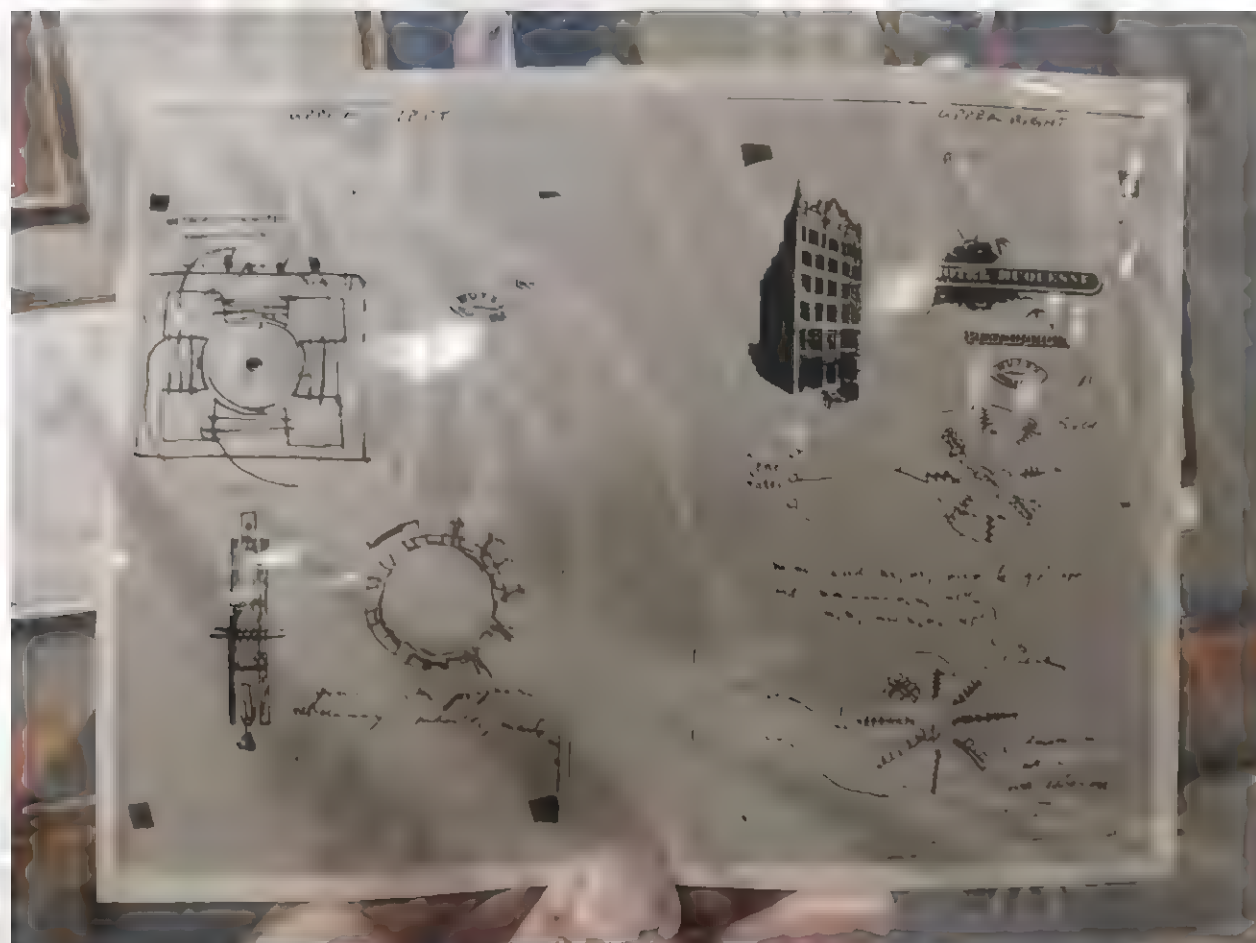
M laminated core covered say with
copper and around, to freely rotate
upon a shaft which is hollow and
through which primary ^{or} wire wound.
Then both primary and secondary are connected
in current free poles appear. These poles
will act upon the poles of the field.

L. V. Tesla

Still open all primary armature of 2000
or more turns in 1000 c.

Teslin crtež i opis motora na naizmeničnu struju na listu hotela Astor haus iz 1890. godine.

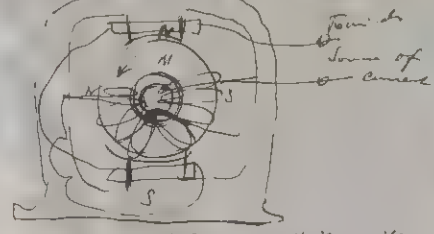






Feb. 2, 1891

WUZZY
METER



All connections have been made with
wires and the battery has been placed
under a small sheet of paper and
the whole enclosed in a box (see
sketch for details). The battery
is connected with the pump. The pump
will not operate until the battery is
connected.

The pump will pump water out of the
reservoir into the tank.

Tested the pump and it worked perfectly. It is a good house.

New York, N. Y.,

Mr. W. L. D. , Jr., Esq.

Pittsburg, Pa.

My dear Mr. Ventinghouse:

As per appointment, I called upon Mr. Brown and Mr. Peck, and found that he, and a party by the name of Peck (whom I imagine to be a lawyer) are the owners of the Tesla patents pertaining to motors. Under a separate cover and by special delivery stamp, I send you copies of these patent papers, together with a copy of the report by Prof. Anthony on the apparatus, which, it is claimed, is covered by the patents in question.

Being in a great hurry, I am dictating this letter to you through Capt. Carden's stenographer, as I have not time to write it myself, legibly.

Brown and Peck took me to a place on Liberty street, where I was introduced to Mr. Tesla, Mr. Hubbard being in company with ~~me~~ ^{me}, and I was shown a great mass of apparatus, ^{among which} ~~containing~~ ^{were} five or six motors. Mr. Tesla struck me as being a straightforward, enthusiastic, sort of a party; ^{but} ~~his~~ his description was not of a nature which I was enabled, entirely, to comprehend. However, I saw several points which I think are of interest. In

H. R. GARDEN
COUNSELLOR AT LAW
SUITE 208,
MUTUAL LIFE BUILDING
NASSAU, CEDAR & LIBERTY STS.

New York,

the first place, as near as I can get at it, the underlying principle of this motor is the principle which Mr. Shellenberger is at work on at the present moment. The motors, as far as I could judge from the examination which I was enabled to make, were a success. They start from rest and the ^{Can be} ^{accomplished} reversal of the direction of rotation ~~is~~ suddenly without any short-circuiting. They were small affairs, and were claimed to develop in the neighborhood of a half a horse power. They were very neat in workmanship and in appearance. Among the other notes which Mr. Tesla showed me, was a little disc, mounted almost identically as Mr. Shellenberger's first experimental disc was mounted, ~~in~~ [✓] which Tesla showed would commence rotating so soon as it was brought in the neighborhood of a circuit through which an alternating current was flowing, and also that its direction of rotation would reverse according as its position with relation to the wire through which the current was flowing was changed. Another device which he had in operation in order to show the principle of his motor, consisted of a disc of sheet iron mounted on a shaft, which shaft ran in journals and around the outer edge of the disc was a stationary annular ring of laminated iron wound with wire similarly to the armature of a Gramme machine. When a current was sent

New York,

thru the wire the sheet iron disc would start rotating and maintain a prodigious speed. Mr. Teal explained that in the practical operation of his motors, he preferred to use three wires all carrying alternating currents, two of the wires having connections from the wires, either primary or secondary, of an ordinary alternating circuit, while the third would be wire carried directly from a sort of secondary winding applied to the armature of the machine. In order to avoid giving the impression that the matter was one which excited my curiosity, I made my visit short and after leaving the room in which the apparatus was working, took Brown and Pack to 17 Cortlandt street, where they stated that after having heard nothing from us for some three weeks after first communicating with Duncan, whom they supposed was our representative, they had carried on negotiations with certain strong capitalists represented by Mr. Butcherworth, of San Francisco, and whom I ascertained was the same party who last spring negotiated with us for use of our system and the Teal was in San Francisco. Brown and Pack expressed a desire to deal with us, if possible, but say that unless we can let them know by ten o'clock, Friday of this week, whether or not we propose, seriously,

New York,

looking into the matter, they will accept Eutterworth's proposition, which they told me was a payment in short-term notes of about Two Hundred Thousand Dollars, and a royalty of \$2.00 per M. P. The terms, of course, are monstrous; and I so told them; and they replied that they could not possibly hold the matter over longer than the date mentioned. I told them I thought there was no possibility of our considering the matter seriously, but that I would let them know before Friday. I would suggest that if you are unable to come here yourself, that Mr Kerr and Mr Shellenberger come on Tuesday night. Please advise me by telegraph on receipt of this. They allege that Prof. Anthony has now joined the syndicate represented by Eutterworth, and who proposed paying the enormous figure mentioned for the patent.

I have important matters to look after to-morrow, or otherwise would have come home to-night.

Very respectfully yours,

J. M. G. M. G.

Westinghouse
Electric Corporation



APR 11 1983

Dear Leland:

It was good to hear from you and have your reminder that I had neglected to send you the Byllesby letter. On resurrecting it, I find I misled you as to the word "preposterous." As you will note, the word was "monstrous." The underscoring, by the way, is not mine.

Looking at the letter now, I feel certain that if I were to ask anyone in our management hierarchy if it is all right to send you a copy of the letter, I'm sure the answer would be "no," particularly if a lawyer were involved. But I'm taking the chance on sending this to you for framing (a fairly big frame), with the understanding that it is not for publication. Should anyone visiting your study start making notes from the letter, you had better have them get in touch with me before thinking of publication.

The thing we have to remember is that the \$2.50 figure is only in a memorandum of agreement; the only signed agreement makes no reference to the royalty. So much for that.

It's interesting that you mention IEEE's 100th. As a matter of fact, I will be in Orlando Monday (April 11) speaking to the Southeastcon '83, on the subject of the Westinghouse Centennial. As part of the conference they are having a session on Electrical Engineering History.

All the best!

Charles Kuch

P.S. Thanks for the congratulations on my 45th anniversary. As it happens, I will be in Orlando on the day I began, 45 years ago.

capital, for all the Boar would be a dividend & leave them still
debt to me 60 or 70,000.

2. Reaerve Sheri but sell evrything else to them for 6% on
capital & a share of possible profit. They assuming my responsi-
lities & my slavery to a lunatic.

3. Wait until this other matter determines itself successfully;
then collect what comes in from Sher, make my capital intact, let
the old regime return Apl. 1 & go unassisted to destruction.

I prefer No. 3.

1. [If by Dec. 31] Sher proves to be unprofitable, demand a re-
construction of contract placing power in my hands where it belongs.
Refusal? Go into court.

2. Demand dissolution. Go into Court.

Can I be held for debts made beyond the capital?

I will buy out or sell out.

Since the spring of '86, the thing has gone straight down hill
to^{ward} sure destruction. It must be brought to an end Feb. 1 at
all hazards. This is final.

Nov. 1, 1888. I have just seen the drawings & description of
an electrical machine lately patented by a Mr. [^]Tesla, & sold to the
Westinghouse Company, which will revolutionize the whole electric
business of the world. It is the ^{most} valuable patent since the
telephone. The drawings & description show that this is the very
machine, in every detail which Paige invented nearly 4 years ago.

To appear in volume III of Mark Twain's Notebooks & Journals

furnished \$1,000 for the experiments, & was to have been used for the invention. We tried a direct current--& failed. We wanted to try an alternating current, but we lacked the apparatus. The \$1000 was exhausted, & I would furnish nothing more because I was burdened in the 3 succeeding years with vast expenses on the Paige type-setting machine. Tesla (& Thompson?) tried everything that we tried, as the drawings & descriptions prove; & he tried one thing more--a thing which we had canvassed--the alternating current. That solved the difficulty & achieved success.

Clarence must give market report--American heiresses buying; rotten dukes. Character as well as title considered in the market, & discounted accordingly.

Who the duke married first--next--& so on--causes of divorce. Disease--but can't name it.

<Buy hearts counters>

(Jerusalem) "Well, the Savior's been here once!"

(To start with, 5 m.--no orders. 1 m sh at 5 each 5000,000. Each 1000th is worth \$5. After 500 orders, \$10--after 1000 15 after 10,000 500 (Ich werde Ihnen ein ^{1/500} von dem Ganzen um \$10,000 verkaufen. (basis, \$5,000,000.

Nach 1000 (orders) 500 Bestellen, um ~~10,000~~ 15,000. (Grund, 10,000,000.

Nach 1000, um 20,000. (Gr. 15,000,000)

" 1500 " 25,000 (" 20,000,000

" 2000 " 30,000 (" 25,000,000

OVER

Written at right angles over preceding paragraph.

Handwritten notes in the right margin, including "Botanica Geriatrica" and "See note".

UNIVERSITY OF CALIFORNIA, BERKELEY

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THE GENERAL LIBRARY

FILE #

Dear Mr. Anderson:

I was interested to hear of your work about the
Tesla's in the papers which you sent. I am sure
that you will have much to say about them. I have
checked our files to see if there is any connection
between Tesla and Mark Twain, but I can find nothing
any. If I can be of any assistance to you in
your work on Tesla, I hope you will let me know.
I have a few references to Tesla in Mark Twain's
papers (in other places), but the only one I
remember is 1 November 1888. I am sending you a
typewritten copy of the note in the context of
the period. This notebook will appear in the
Mark Twain
Notes & Journals which we are now editing for the
University of California Press.

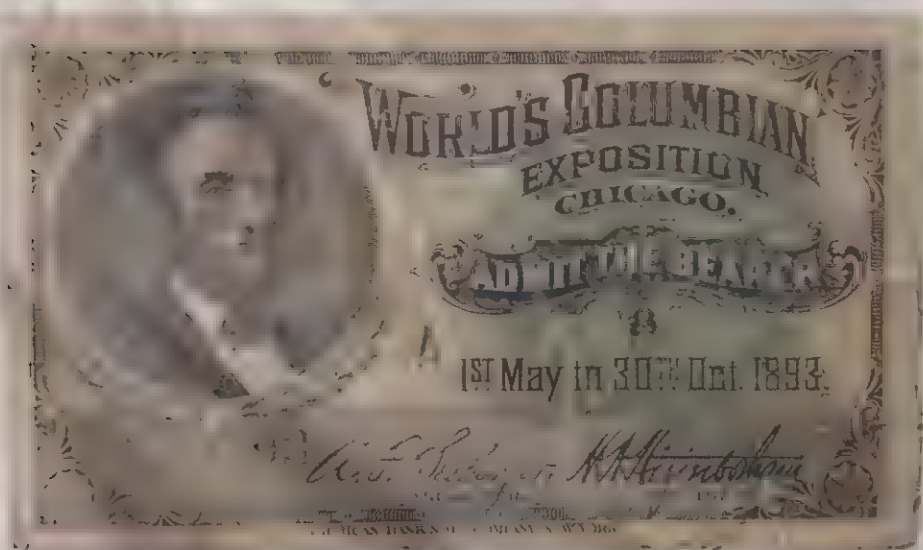
Sincerely yours,

Fr. Anderson

Frederick Anderson
Editor - Mark Twain Papers

Mr. Leland I. Anderson
141 Vine Street
Denver, Colorado

8220









-S.

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I. A
Meac
802

ND S NL B LD NGS



Denver



BROOKVIEW OF GROUNDS AND BUILDINGS



of July 11.
identity of "Fodor"
"tojanovic of Belgrade,"
21, 1954. The accession I
-man, but I

THE LIBRARY OF CONGRESS
WASHINGTON, D. C. 20540

AUGUST 17, 1987

Dear Mr. Anderson:

This is in repl to your letter of July 17.

I regret that we do not know the identity of Fodor. The letters to him were part of a gift of Mr. Spasche to the Library of Congress, and were received in the Library in January, 1934. The accession record mentions that Fodor was translating Tesla's lectures into German, but I expect that information was taken from one of the letters.

You have photocopies of all of the Tesla letters known by me to be in our collections, but of course there are others which I have not noticed. Your photocopies are enclosed.

Yours sincerely,

Ronald S. Wilkinson

Ronald S. Wilkinson
Manuscript Historian

Enclosure

Mr. Leland I. Anderson
2525 South Meade Street
Denver, CO 80219

2525 South Meade Street
Denver, Colorado 80219

July 17, 1987

Mr. Leland I. Anderson
2525 South Meade Street
Denver, CO 80219

THE LIBRARY OF CONGRESS
MANUSCRIPT DIVISION
WASHINGTON, D. C. 20540

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300
500

manuscripts

has four letters in its collection (attached). I am anxious to learn the 19/92 letter, it's possible that of Tesla's lectures into German. I found that Fodor is published. Mentions reading Fodor a cable (to Perhaps the provenance of these as to the identification of information that...

rs (at least 15!) since I queried findings of Tesla manuscripts. I

ached)
exchange of 15 letters from

ers of 9/29/15, 10/8/15, and
' 8/28/01, 8/30/01, and 9/13/01).

dings than these (excluding the
ears ago from the Muzej Nikole
e advised of them.

Sincerely,

Leland I. Anderson
Leland I. Anderson

2-25 South Meade Street
Denver, Colorado 80219

July 17, 1987

Dr. Ronald Wilkinson
Manuscripts Division
Library of Congress
Washington, D.C. 20540

Dear Dr. Wilkinson:

Subject: Nikola Tesla manuscripts

The Manuscripts Division has four letters in its collection from Tesla to Fodor. Attached are four articles to learn the identity of Fodor. From the 9/9/12 letter, it's possible that Fodor served as a translator of Tesla's letters into German. From the 11/27/12 letter, it's found that Fodor is published. From the 1/1/13 letter, Tesla writes asking Fodor a cable (to England or Europe) (possibly). I think the prevalence of these letters might provide some clue as to the identification of Fodor. I would appreciate any information that you might be able to provide.

It's been a number of years (at least 15!) since I queried the Manuscripts Division on holdings of Tesla manuscripts. I have copies of the following:

Fodor (four letters as attached)
John Hayes Hammond, Jr. (exchange of 15 letters from 10/13/10 to 2/13/14)
Benjamin F. Miessner (letters of 9/29/15, 10/8/15, and 11/8/15)
Stanford White (letters of 8/28/01, 8/30/01, and 9/13/01).

If there are any additional holdings than these (excluding the microfilm rolls received some years ago from the Muzej Nikole Tesle), I would be pleased to be advised of them.

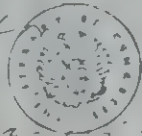
Sincerely,

Island I. Anderson
Island I. Anderson

Attachments: Copies of four L/C letters
from Tesla to Fodor.

Ston Brook March 19. 1893.

My dear Father



I have received both your letters of Jan. and Feb. I would have written to you before this, but every moment of my time was taken up and besides, my health has not been satisfactory. I am now preparing my lecture on Light phenomena, of which I shall send you a copy just as soon as it is ready. I shall also send the Golden Corridor of your book (which I have not received as yet) as soon as possible.

Yours sincerely

N Tesla.



New York Jan 1 - 1893.

My dear Edison

I am sorry about the long delay in forwarding to you the manuscript. A few days after it was mailed, I believe, I cabled to you and trust that you have received my dispatch. I also hope that no material disadvantage has resulted from the delay. Will to-day's mail send you a copy of my abstract which has just appeared in the "Proceedings" of the Royal Institution. It may give you a better insight into some ideas which I have advanced.

Yours sincerely
N Tesla.



New York Nov 27 1892

My dear Fodor,

Your letter of 12^{inst}. and
manuscript has arrived in the
course.

I shall return the letter
as soon as possible.

Thanking you for your friendly
interest and good opinion and
hoping that your book will
meet with a success such, as
will perfectly repay you for
the pains taken, I remain

Yours sincerely
W. T. Allen.



New York Sept 9 1892

My dear Doctor



It is only now on my return from abroad that your fav. or replies have come to my hand. I can not recall to have received a letter from you before this, as you infer, I certainly would have answered it.

Of course I am pleased to learn that you have thought it worth while to translate my lecture in German, I am convinced that the translation will be a good one. If I can aid you in any way I shall do so with pleasure.

Yours sincerely

Arthur Tappan

I send copy of my
lecture with some
kind.



New York Sept 2 1892

Dear Mr. [unclear]

It is only now on my return
from abroad that your letter of Sept. 1st
has come to my hands. I am glad to
have received a letter from you before
this, as you infer. I certainly
have answered it.
You have thought it worth while
to translate my letter in German - I
am convinced that the translation will be
a good one. I can send you a
very [unclear] [unclear] [unclear]
Yours sincerely
[unclear]

I send copy of my
letter which is
sent.

Dear Mrs. Brewster

My dear Friend

I have received your letter of the 10th. I wish to answer it as soon as possible, but every moment is at present taken up with business, my health has not been improving. I am now preparing the letter to you, as soon as I can send you a copy, but as soon as it is ready. I shall be able to follow through of your book, which I have not seen yet, as soon as possible.

Yours sincerely

J. T. Foster.

11 of Mr. Brewster's letter
of Dec. 10th, 1851, JAN. 21, '52



The Fort Erie

FINE PROOF
FAMILY HOTEL

27th ST BETWEEN BROADWAY & 6th AVE.

CHARLES ACERLACH

PROPRIETOR

New York Nov 1 1893

Dear Father

I am sorry about the long
delay in forwarding to you the manuscript
a few days after it was received. I
believe, I called to you and trust
that you have received my dispatch
I also hope that the business de-
rangement was avoided from the delay.
This morning's mail I send you a
copy of my abstract which has been
approved by the "Proceedings" of the
Royal Institution. It may give you
a better insight into some ideas
which I have advanced

Yours sincerely
A. F. C.



New York, Oct. 2, 1892

My dear Fodor,

Your letter of 12th inst. and
manuscript has arrived at the
museum.

I shall return the same
as soon as possible.

Thank you for your kind
words and good opinion. And
hoping that your book will
be a great success, as
it is every way good for
the species known, I remain

Yours truly
W. F. Fodor.

Mjegovan, Vladimir. NIKOLA TESLA - HODJ. PREKID.
Procavje, Zagreb, 1950. Pp. 64.

Page 28:

(Narrative previously, p. 26, says that Tesla after his lectures in London and Paris, visited Gospić to see his ailing mother, who died in his arms.)

This letter (Gospić), April 21, 1892, "in black border" is a reply to one received from one of the mother's brothers. It expresses his grief, despite the fact that he foresaw his mother's death, for, considering her general health, he hoped she would still live long. -- He is sorry they could not meet before she when he had come to Slavonia, and will inform him when such a meeting can be arranged.

*

Page 29: To Col. Pajo Mandić (care of Hon. Pero Lupa, "so.") Panna, 1892, Hungary, Europe.

Written at The Gerlach, Strictly Fire Proof Family Hotel, 27th St.
between Broadway and 8th Ave., N.Y. N.Y. 21.30, 1893.

Dear Uncle:

(Was glad to hear of his uncle's retirement; would have been happy for him to have visited the Chicago Exposition, but "Uncle Peter" had given good advice about the uncertainty of the transportation because of daily train accidents; and again a financial panic such as America had not seen. Things look better now but it will take 2 or 3 more days before the heavy wounds suffered by industry are healed. He has much he could report. At the request of many scientists he lectured before the Science Congress at which he showed the inventions he was currently working on. These are now steam and electric machines, from which he expected great successes. The same is true of his motors, which, because of the bankruptcy of a certain company and poor financial standing, were put to small use; now they are in use and the prospect is very good. If it succeeds, then his invention will be used there. It appears that his system of machinery could be used in the transfer of power at Niagara. In the main, it looks as though some of his ideas will be used in this gigantic project. Were this to happen, he would earn much money; he is not thinking of this, but he would like to help his relatives. It appears to him that he has achieved greater fame than anyone else in his profession; he has received one honor after another, and this encourages him and spurs him on. He envisages that if he could develop only one (thing) practical, the entire world would be affected. -- His health is good. Most of all one misses good wine. He would like to pay well if he could get it in small bottles, since large bottles are inconvenient; he doesn't drink much. "Quality and not quantity."

Regards to family -- good wishes. Your nephew, Nikola.)

• • •

Page two - Nikola Tesla letters

Address: unknown

Letterhead on the paper, as above.

New York, Nov 11, 1903

Dear Uncle:

(He writes only briefly and hurriedly, being greatly occupied by a task. But, God willing, he hopes to see him in a few months. Now he has just completed a new invention over which he is elated. The success is wonderful in every way except monetary. But this is bound to come. If he had enough money to be independent, he could acquire a large possession. In the present situation that he finds himself he will have to take what he gets.)

(There are references to Sime, or Milan, and apparently some ill health where Sime is concerned. He expresses regrets at the uncle's disapproval. He (Sime) had given him advice beforehand. Hurriedly, Your Nikola.)

P.S.: To Rt. Rev. Nikola Mandić, Metropolitan, D. Guala, Vienna, Austro Hung., Europe.

From Nikola Tesla, 35 South Fifth Avenue, New York, Dec. 8, 1903.

(First paragraph: comment on exchange of letters between them.)

(Second paragraph: Says that his system of machinery illuminated the Exposition; his inventions received the most interesting reactions there; and, as he had stated, his system was being used at Niagara. These are the main points of steam power machinery for the conduction of electricity. His lecture made an indelible impression. It would be difficult to convey how impressed he was in the scientific world today. He has received many letters from the highest men (in the field) recommending that he modify (perhaps, lessen) his work. For there are plenty of scholarly (?) people but a small number of those with ideas. This, instead of diverting him from work, creates further enthusiasm. He expresses his feelings on the day he received an autographed photograph, "From Edison to Tesla.")

(He is working night and day on something that he feels will be of incalculable value to mankind, but he is afraid his powers will fade before he finishes it; this is something difficult for him to explain) (It is rather vague as to which part of his statement he is referring here. M.M.)

(A book is being published, describing his collected works. This was assembled by one of the leading writers in the technical field. The book is dedicated to his countrymen. The uncle will receive a copy, but, unfortunately, it is in English.)

(Family greetings and congratulations "on your success." Your nephew, Nikola.)

Page three - Nikola Tesla letters

P.33: Address: Unknown

From: The Gerlach (as above) N.Y., Jan.25, 1894.

Dear Uncle:

(He comments upon not having time to write, then states that the ring recently sent to the uncle - which he is awaiting as "the Jews (await) the Messiah" has not reached him yet.)

(He has much news. His system is being used at Niagara. His new invention, called "oscillating" is progressing splendidly and the entire outlook is good. He says nothing of the "machinery", i.e., the physical health - it is not exactly ill, but it could be worse. (This allusion is undoubtedly alluding to the health of a friend or family member).)

(He hopes that the influenza has not been harmful. The Americans do not worry about such things as the influenza. They take a large glass of whiskey, dissolve from 10 to 20 grams of quinine in it, then go to bed, sleep, and in the morning they are as well as a steel ingot. Try this and you will see you will not have influenza.)

(Does not have time to write to Maria.)

(He has sent the book describing his works. He has sent a copy to every sister and uncle. The book is enjoying success and is in the second edition.)

(He is hoping to see them on a business trip to Europe. All his doctors and friends are advising him to stop working, but this is difficult for him as his work is finished.)

P.34: To Hon. Colonel Paul Mandić (k.k. Oberst)

Garašdin Hungary Europe

From: The Gerlach (as above)

New York, April 13, 1894

Dear Uncle:

(Writes briefly, only to inform that there is still no wine, so that all the bottles sent by him - i. e., this Uncle - and those sent by Uncle Trivun must have broken. - Do not send me Dalmatian (wine) in the small barrels; I have experimented with this and it does not go. The only way would be to send Magyar wine in bottles. - Not long ago he got a gold medal from Franklin Institute for his accomplishments; some university has offered him a Doctor of Philosophy degree. He knows this will interest him. Everything looks fine now. He is progressing well with some invention and he hopes to finish it soon so that he can take a rest.)

(Greetings from Your Nikola.)

Page four - Nikola Tesla letters

P. 34. Address of person to whom writing not given.

New York, May 17, 1894

Dear Uncle:

(He is answering to his and Maria's letters hurriedly, for time is precious.)

(Don't worry about the wine. - He got hold of something similar, - some French brandy, not as good, but it could be worse.)

(He intends to go there soon, and it would please him to see Uncle and Aunt so that he could visit him.)

(He will send the Peri book (Perry?) some day, and is sending an article to a large magazine, Century, which has some translations of Zmaj's poetry. - By this success I judge that Serbia profited more by these articles than from my work in the field of electricity. (I am not clear whether this means that he translated the poems, for he uses "article" in the second part of the sentence. M.N.)

(He is progressing well, and one new machine for illuminating is now in operation. He hopes for much success when this will be put into operation.)

(Family greetings. - "I would write to Maria, but I cannot bring myself to enter into correspondence with ladies.") Your Nikola.

P.35. On May 13, 1895, there was a big fire in Tesla's laboratory in New York, which destroyed not only all his apparatus but everything that was of historical and of similar interest for Tesla's work. This fire caused tremendous and irreparable loss to Tesla. Only his unusual nature enabled him to survive it. In an interview to the Electrical Review, Tesla said:

"Everything is lost, not only what had importance for new works; more, and all that had personal value."

The Sun wrote:

"The downfall of Tesla's laboratory in New York is a misfortune for the whole world. It is not an exaggeration to say that there is not a more important person for mankind today than this young man."

This and similar expressions gave Tesla the moral support to begin the construction of a new laboratory, which began functioning in 1896.

(Abstracts of letters and translations of Nikola Tesla, in Tesla's Archives, June, 1900.)



FAMILY HOTEL

Nº: 40.913.526-56 WEST 17 - SIMU

I will let you know
when I am home.
I have been very busy
and cannot find time
to write to you. I think
that it is better to
wait until I can write
something more than
a few lines. I hope
you are well and happy.

Handwritten text on a dark, textured surface, possibly a book cover or endpaper. The text is written in a cursive script and is arranged in approximately 20 lines. The ink is light and the background is dark, making the text difficult to read. The text appears to be a letter or a short story, but the specific words are illegible due to the poor quality of the scan.

NIKOLA TESLA,
35 SOUTH FIFTH AVENUE

New York Feb - 1900

My dear Mr. Johnson

Your kind letter received
I have no more to write at
present as I am busy with
business matters but I will
be glad to hear from you in
future with
the laboratory -

Very truly yours

Nikola Tesla

COLUMBIA COLLEGE
THE CITY OF NEW YORK

PRESIDENT'S ROOM

Feb. 5th, 1894.

To the Trustees:

I take pleasure in suggesting for the honorary degree of LL.D., Mr. Nicola Tesla of this city. In this connection I transcribe an extract from a letter from Prof. Osborn, bearing upon this subject as well as upon my earlier suggestion that the honorary degree should be conferred upon Mr. J. W. Hill.

Respectfully,

John D. Hill

President.

Extract from Prof. Osborn's letter.

"I have especially upon my mind two matters which I think will appeal to you very strongly. The first is connected with Mr. Hill of Nyack, and the second with Mr. Tesla of New York. I have learned recently that Mr. Hill is considered the leading Mathematician in this country, and there seems to be little doubt that Mr. Tesla is the leading Electrician. They both are in a measure connected with Columbia through Mr. Hill's lectures here, and through the fact that Mr. Tesla at Professor Pupin's and Professor Crocker's invitation gave his first electrical lecture in Columbia. So that

we have already established a sympathetic relation with those great
men. I spent an afternoon recently with Tesla, and regard him as
one of the most distinguished men I have ever met. I happened
to meet Prof. or Brooker shortly afterwards, and learned from him
that he had spoken to you in regard to giving Tesla an Honorary
Degree. I would like to support this in the most earnest manner.
Foulton tells me that Tesla was covered with honors while in England
and France. We certainly must not allow any other University to
anticipate us in honoring a man who lives under our very walls."

*Very truly,
J. Edgar Hoover*

EDITORIAL DEPARTMENT
THE CENTURY MAGAZINE
UNION SQUARE, N.Y.

EDITOR
EDITOR

1894

May 17. 1894.

Dear Osborn:

I send you with
this Martin's book on
Fisher's inventions and
writing, together with two
copies of the Century - one
containing Martin's biographical
sketch of the inventor and the other
Jesse's note on Zouai with my
"Paraphrases" after his prose translation.

There would be a partic-
ular appropriateness in Colum-
bia giving him a degree since his
first lecture was if I mistake not
delivered at her College and since
New York City is the seat of

his
Chair
you
higher
reach
your
true
occupy
both
of se
work
of 2
the
of se
the
of 7
to do
for 9
or
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4
in
2
to
in
a

important Dis-
cussion of his work for several
years past. It is clear that his
degree would be commensurate with the
recognized reputation of his name and his
rank in his profession. I think it may
be said that there are few men
occupying a unique position like his in
the medical and practical fields
of scientific work, and hardly any whose
work goes more for the amelioration
of the human condition of life after the loss
of sight. Having seen a great deal of
him during the last six or eight
years I have been deeply impressed with the
scientific and scholarly temperament of
the man. I have never heard a hint
of a scientific nature mentioned in his
presence upon which he did not seem
to be thoroughly well informed. As for
bookishness, he is on terms of intimate
friendship with Crookes, Helmholtz, Lord
Kelvin & others. Very rare his friend. But
I need not enlarge on his scientific rank
or standing, for they are too well known.

As to his general culture, I may
say that he knows the language and
is widely read in the best literature of
Italy, Germany and France as well as
much of the more countries to say
nothing of Greek and Latin. He is per-
fectly up to date and is always
well informed in matters of science
as the foregoing conversation will show.

... in you, of such diversity
of special knowledge as each corner
of knowledge. He is 'not much in
(nature is not apparently but is
'head of nature'. Most of all he
is devoted to his profession with an
intensity I have not seen equalled.

As to his character it is
one of distinguished sweetness, sincerity,
modesty, generosity and force, as you
yourself have seen enough of him to know.

Truly yours,

C. R. Johnson

Prof. H. F. Osborn.

The New York Public Library

Astor, Lenox and Tilden Foundations

100TH AVENUE AND 42ND STREET

NEW YORK, N. Y. 10015

Leland I. Anderson
1709 Eldridge Avenue West
St. Paul, Minnesota 55113

Dear Mr. Anderson:

Your letter of December 6th has come and I wish to reply promptly regarding T. T. Munger, a figure involved in the attempt to secure an honorary degree for Tesla.

This is undoubtedly Theodore Thornton Munger (1830-1910). You will find a biographical sketch of him in The Dictionary of American Biography. It will establish his relationships (Class of 1851, also graduate of his Divinity School) and his influential position as pastor of United Church, one of the three churches which stand on New Haven green.

A letter to Yale Library would receive a quick solution of Professor Hastings' identity, you may be sure.

Yours truly,

Robert W. Hill
Keeper of Manuscripts



New York, April 10 1893

My dear Mr. Broughton,

I need not assure you that
I feel much indebted to you for
your valuable help at the occasion
of my lecture in St. Louis.

I beg you to accept the photo
which I enclose as a proof
of my friendly feelings towards
you.

H. P. Broughton Esq. St. Louis



To Mr. A. C. Broughton
with sincere regards
from Nikola Tesla

THE GERLACH

New York, April 10 1893

My dear Mr. Broughton,

I need not assure you that
I feel much indebted to you for
your valuable help at the occasion
of my lecture in St. Louis.
I beg you to accept the photo
which I enclose as a proof
of my friendly feelings toward
you.

Yours sincerely

N Tesla.

H. P. Broughton Esq.

(enclosed photo enscribed "To Mr. H. P. Broughton
with sincere regards
from Nikola Tesla")

V. S. ...
L. ...
Sept. 1, 1908

V. S. ...

V. S. ...

Fifty-three years ago, in 1855, the first
transmission of an electric signal was made
by a wire between two points.

In 1895, a man named Marconi made the first
wireless transmission of an electric signal
between two points.

In the receiver, at the other end of the
wire, the signal was received, and the
message was read. This was the first
wireless transmission of an electric signal.
The voltage was low, but it was enough
to make the signal visible between transmitter and receiver.

The transformer in the transmitter
a special electric power line from the
battery. When this switch was closed, the
circuit was completed, the Leyden jars
charged, the spark gap cracked, and
an invisible electromagnetic field
from the transmitter antenna wire.

Simultaneously, in the receiver circuit,
the signal was received from radio-frequency
excitation of the receiver antenna wire.

Thus wireless was born. A wireless message
sent by the 5-kilowatt spark transmitter, and
received by the Genssler-tube receiver thirty feet away.
The first radio communication ever.

The world-famous genius who invented, conducted, and
tried this demonstration was Nikola Tesla. (Now here is the
punch line.) Tesla's twenty-eight year old assistant on stage
was my father.

So, the Museum Memorial amateur radio station W2FB carries
the name of a real old timer in our radio. You all are invited
to come see the luxuriant new station facilities the Museum has
provided on the second floor over in the front corner.

We've come a long way since 1855!

Thank you.

WGB

W2IR
WM. G. BROUGHTON
108 P. Ave. Emd
Schenectady, NY 12308

May 2, 1966

Mr. Leland I. Anderson
2025 South Meade St.
Denver, CO 80219

Dear Leland:

Your AWA Monograph No. 4, "Priority in the Invention of Radio," is the only publicity I have seen that addresses directly the vital priority aspect of Tesla's inventive genius. I am delighted to have it for our Tesla "Collection of Regional History #2712, boxes 48 and 88" in the John M. Olin Research Library at Cornell University.

Your Monograph, Martin's book, and others, all mention Tesla's landmark NELA St. Louis lecture in 1893. This is the one during which, and in a week's preparation for, my father acted as Tesla's sole assistant. Many times I have listened to father's glowing accounts of his pleasant association with Tesla in this work. My dedication speech* touches upon some of the highlights, as I recall them.

It has always piqued me somewhat that Tesla was so magnanimous to George Westinghouse in absolving him from \$1,000,000 or more in patent obligations. In his later distraught financial straits, Tesla could have made good use of this well deserved bonanza.

Congratulations to you for continuing to help build an impeccable documentation to establish in history Tesla's true stature as one of our few top-flight pioneer radio inventors. Father would like that too, and agree with this needed reevaluation of relative prominence of scientists in the earliest days of wireless.

Best regards,

Bill

Wm. G. Broughton

*Enc,
"W2IR DEDICATION SPEECH"

New York, April 29th, 1899.
46 & 48 E. Houston Str.

Mr. M. J. Strong, J.D.,
711 Franklin Str.,
Philadelphia, Pa.

My dear Sir:-

I regret that under the pressure of my engagements I was unable to answer your letter before this.

If you have an idea which appears to be good, I would advise you to file a caveat and secure it. I shall only be too pleased to offer you my opinion after you have secured yourself.

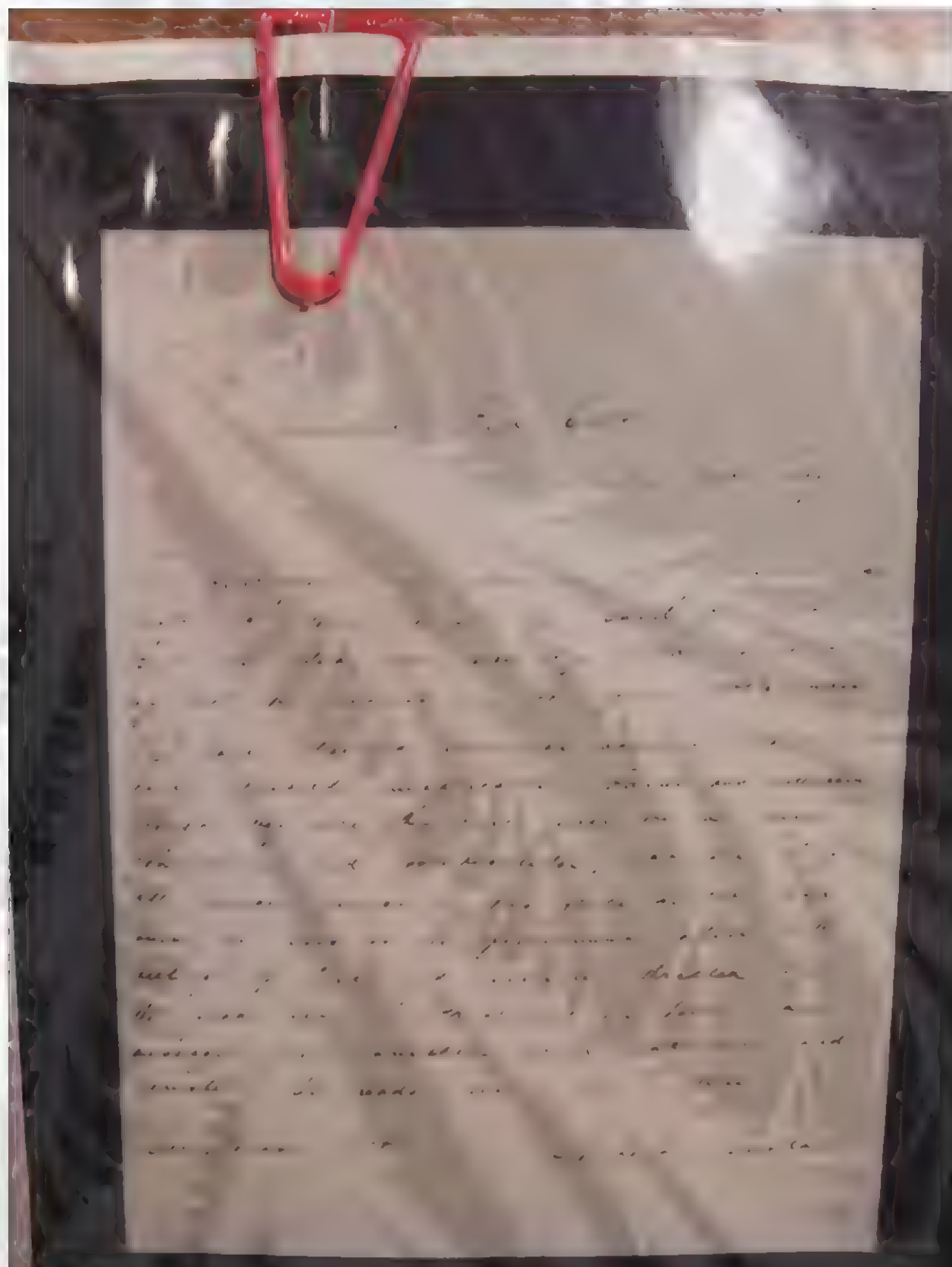
Believe me to be,

Yours very truly,

J. T. Ford

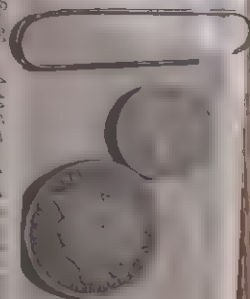
THE CAVEAT LAW

Enabled an American privately to disclose his invention. Found useless in protecting patents in the U.S. and a source of annoyance to foreign governments.





Boat James Watson



New York, Oct. 29th, 1900.

46 & 48 East Houston Str.

Col. J. J. Astor,
840 Fifth Ave.,
New York City.

My dear Col. Astor:-

Since I wired you last Friday evening my mind was so much taken up with some thoughts, that I was unable to write, as promised in my dispatch which, I trust, you have received.

You will know that for a number of years, ever since I made my first lecture demonstrations, I have been engaged in the important problem of producing an efficient illuminant. Light is so vital a factor in civilized communities, and the present processes of getting it are so wasteful, and the capital invested in it all over the world is so enormous, that the realization of this task must be considered as one of the greatest benefits which an inventor can confer upon humanity. Lighting by incandescent lamps is an almost barbarous method, inasmuch as we waste ninety-nine and a half percent of the total energy employed; and the arc-lamps, though a little more efficient, are equally, if not more objectionable.

Some time ago an improvement was made by Prof. Nernst, of Germany, who produced an incandescent lamp by coating a wire or filament with some rare oxides. His lamp proved more efficient, and when my advice was asked in regard to it, I recommended it, and it is now being introduced here. Although better than an ordinary incandescent lamp as regards the consumption of energy, it has only a small commercial advantage over the latter on account of some drawbacks, one of which is, that it must be started by an artifice. Besides, the process is still wasteful and the light has the great objectionable features common to other artificial illuminants: It is concentrated, glaring and hurtful to the eyes and is not diffusive, as it should be, like the light of day.

From my first experiments on the world has been looking to me for the production of this kind of light, and you may believe me that, if it could have been obtained by simply trying hard, I would have had it long ago, for this undertaking has consumed much of my midnight oil. The difficulties seemed insuperable, but with the perfection of oscillators I also improved my light, and about two years ago I began to feel sure, that I would succeed in making it commercial. This stage I have finally reached, and when I lighted my laboratory the other evening from a small oscillator, I

saw clearly, that I had developed a system of lighting, with which no other can compete. The light is soft and agreeable to the eye and diffused, just like daylight, penetrating into all the nooks and corners and casting scarcely any shadows. I asked a few persons who had not seen it before, what they thought of it, and each of them independently said, looking around astonished: "It is just like day." This statement is borne out by the fact, that when the lamps are lighted during the day, they can hardly be seen, and yet at night they throw off a flood of rays. This light is also healthful and germicidal and will be an ideal illuminant for dwellings, as well as for streets. The lamps differ from all others, because they never consume, since there is no filament or carbon in them, but only gas inclosed in a sealed glass tube.

The commercial value of this light, if rightly exploited, is simply immense. A hundred great fortunes can be made in introducing it, and you will be convinced of this in a short time, when you see my "artificial daylight" and learn more about it. I am now working out the details of a commercial plant, which I hope to put out, but in view of patent matters I would beg you to keep this information still personal. I am anxious that you should see the light, but please inform me before coming, as otherwise, on account of my absence or some changes that I am making you might miss it.

With kind regards believe me,
Yours very sincerely,



I wish to announce that in connection with the commercial introduction of professional services in the general capacity of consulting electrical engineer, I expect with confidence, will be a witness to the production of that formation and transmission of energy, and the chemical compounds, telegraphy, telephony and other electrical devices.

In my opinion these devices are certain to follow in the future, and high-frequency currents and novel regenerative apparatus, and temperatures.

Much of the old apparatus will have to be improved, and much of the new apparatus that while furthering my own investigation, I shall be more helpful in the disposal of other, the knowledge and experience I have gained.

Special attention will be given by me to the solution of problems requiring information and inventive resource—work coming within the scope of my prediction.

I shall undertake the experimental investigation of the devices and useful expedients, and in particular the attainment of the new results.

Any task submitted to and accepted by me will be carried out.

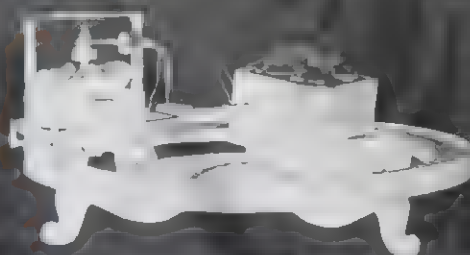
Laboratory, Long Island City, N. Y.
Residence, Waukegan, Ill., U. S. A.

In connection with resonance, I have been thinking of the transmission of energy over a single conductor. I would say a few words on a subject which constantly fills my thoughts, and which concerns the welfare of all. I mean the transmission of intelligible signals or, perhaps, even power, to any distance without the use of wires. I am becoming daily more convinced of the practicability of the scheme, and though I know well that the great majority of scientific men will

be perfectly satisfied with this, I have produced electrical discharges the actual path of which, from end to end, was probably more than a hundred feet long, but it would not be difficult to reach lengths one hundred times as great. I have produced electrical movements occurring at the rate of, approximately one hundred thousand horse-power, but rates of one five or ten million horse-power are easily

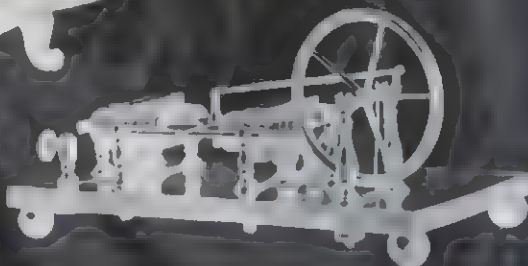
History of Development and Application of the ELECTRIC MOTOR A Pictorial Tour of the Electric Motor Design

1831 One of Faraday's original models used to demonstrate motor action of current-carrying wire in presence of a magnetic field. In 1820, Oersted had related electricity to magnetism by influence of current flow on a magnetic compass needle. Faraday's lines-of-force theory is still a most useful concept, although some would challenge "What Makes a Motor Run?" (See ELECTRICAL MANUFACTURING, Jan. 1948, p. 109; March, p. 114; June, p. 102; Sept., p. 89, and December, 1948, p. 196.)



One of several types of reciprocating electromagnetic engines developed by Dr. Charles G. Felt. This model was patented in 1884 (No. 10,480). In larger sizes these machines developed over 10 hp and were applied to a locomotive in 1891. Between 1837 and 1870 when the dynamo electric machine began to take its modern form, 16 patents on magnetic engines were taken out by American inventors. Abroad, the first electromagnetic machine was built in 1828 by Prof. Moritz Hermann De Jacobé (Hannover) to propel a boat on the Volga.

1837



MOTOR development may be divided into four periods: 1—discovery of electromagnetism; 2—first crude electromagnetic machines; 3—conception of modern dynamo and its reversibility as a motor, and 4—development of a type. Period 1 was pure science. Period 2 was marked by battery power, a decided deterrent to useful work. Period 3 saw the development of the central station dynamo as a power source for motors; and conversion of dynamos to motors. Period 4 marked the beginning of large application growth since it led to the development of the squirrel cage induction motor.

Oersted, Ampere and Faraday laid the groundwork for electric motor theory. In July 1820 the Danish scientist H. C. Oersted, related electricity (galvanism) and magnetism by noting that a compass needle takes a position crosswise to a wire carrying a current. Shortly afterward Andre-Marie Ampere laid down laws governing mutual attraction and repulsion of parallel wires carrying current. In 1831 Michael Faraday demonstrated the tendency of a

1831 Prof. Joseph Henry's electromagnetic engine, a "philosophical toy", did an useful work but was the first electric motor. Armature oscillated when coil leads alternately dipped into mercury cups connected to wet batteries, not shown.

1837 First U. S. patent (No. 132) on an electric motor was issued to Thomas Davenport of Brandon Vt. on Feb. 25, 1837. Circumferential model shown with "armature" in Southwestern position. This motor has two strong electromagnets, one on armature rotating in a horizontal plane, the other a stationary field connected in parallel. Davenport was not successful in commercializing his invention, although subsequently a great many.

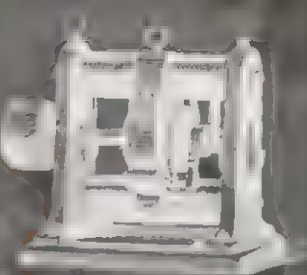
Although its roots go back over 125 years, the practical electric motor is hardly 70 years old; most applications were conceived before 1900.

First Attempts to Apply Electricity

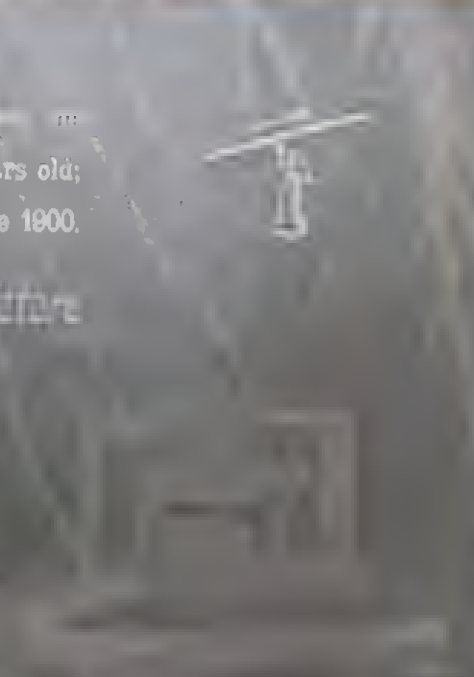
wire carrying current to cut lines of magnetic force around the magnet. The force of attraction and repulsion of electromagnets.

The first practical electric motor was built by Michael Faraday in 1821. It was a simple device consisting of a wire carrying current that could rotate around a magnet. This was the first demonstration of the conversion of electrical energy into mechanical energy. Faraday's experiment showed that a current-carrying wire placed in a magnetic field would experience a force that could cause it to move. This principle is the basis of the electric motor.

Frank J. Sprague, onetime Edison associate, developed the first real commercial motor.



1870 Gramme's ring-armature generator, covered by British patent No. 1658 in 1870, was widely copied in this country in generators built as late as 1902. It was patterned after the shuttle wire armature of Siemens (1856) and Pacinotti's commutator.



1860 Pacinotti machine a forerunner of modern motor design. Armature consisted of an iron ring with 16 teeth between which coils were wound, separated by triangular wood spacers. Coils ends were brought out to commutator made of 16 brass pieces fastened to a wood wheel.

1872 Model of Siemens (Alarneck) drum or shunt. The wound armature that was used in early Edison dynamos and motors. Wide air gaps resulted from winding wire directly on drum.



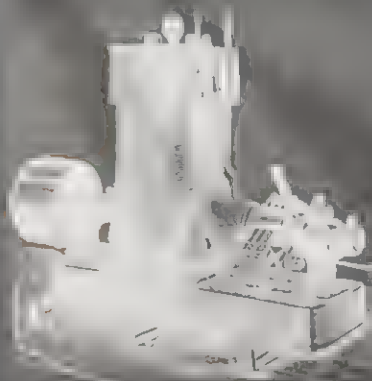
1884 The Sprague motor was the first practical stationary apparatus designed specifically to convert electricity into mechanical energy. Instead of being a converted dynamo. This self-regulating d-c motor had shunt winding and differential series coil; maintained constant speed on constant voltage.

1882 Edison's first practical d-c motor was applied to the Pearl Street Station in New York was put into operation on Sept. 4, 1882. The dynamo shown was rated at 1200 16-candlepower lamps. It was two years before the first motor was connected to the line.

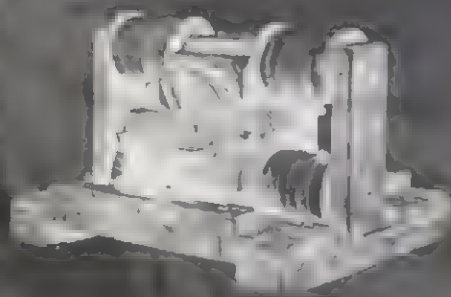


1876 Small plating dynamo designed by Edward Weston and built by Roberts O. Howell, Newark, N. J., for Condit Hanson & Van Winkle Company. Rated 20 amp, 4 volts. Three-part copper leaf brushes. To prevent field reversal through platinum brush battery action, belt-driven motorary cup contact at right breaks circuit when generator is stopped.

1885 Motor designed and built by Charles F. Brush for government to shift brush positions to compensate for change in speed and load. Variations of the Brush dynamo were made by General Electric for many years.



1892 First motor made by the Edison General Electric Co. were all about identical with the Edison bi-polar dynamo operated as a motor. Produced in sizes from 1/2 to 150 hp. They had automatic starting rheostat and self-oiling bearings.



1878 This early high tension dynamo, made by Prof. Elihu Thomson, was a forerunner of polyphase a-c machinery. It had both a-c and d-c characteristics. Its three-phase winding on armature would generate a-c when picked up by collector rings, but a-c patent claims were disallowed.



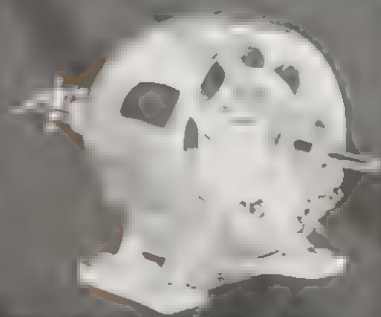
1887 Elihu Thomson's self-starting machine motor. It had a closed coil C. At A, coil C has its terminals shorted through a commutator. A cleavage in the stator winding of the motor is shown at C. The supply exerts a "repelling" effect on the stator winding. The electrical form is illustrated at D.

Early A-C Types

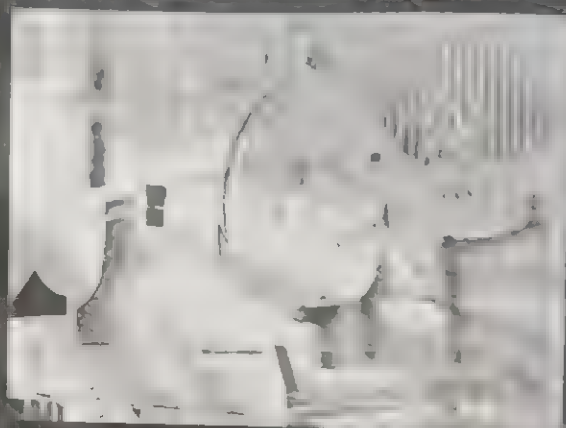
Sketch at right shows Nikola Tesla's earliest conception of a polyphase induction motor in which he introduced idea of rotating magnetic field. Field was a ring of laminated steel disks with four coils supplied from 2-phase generator through four wires. Coils were connected so as to produce N and S poles on opposite sides of ring. Drum armature was provided with two

closed coils at right angles, with or without internal connections. (Required "this design" Tesla patented several types of single-phase motors. One produced a different sort of phase in the field winding by introducing a resistance in one circuit and an inductance coil in the other. He also patented a motor with condenser in armature circuit.)

1888



1892 Early form of 2-pole wound-rotor Tesla motor with leads brought out through ball-bearings to slip rings. This model is from the Westinghouse historical collection now in the Edison Institute, Dearborn, Mich.



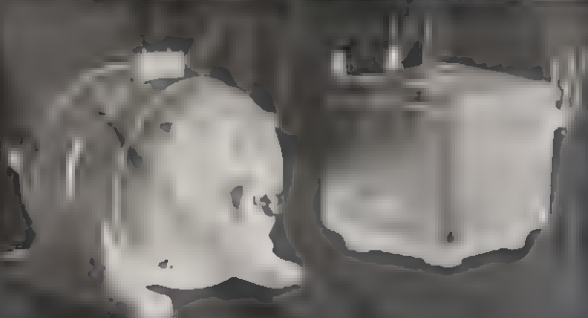
1894 Earliest commercial Tesla motor developed by Westinghouse engineers is pictured above. Introduced about 1893, this two-phase 200-volt wound-rotor machine had resistances attached to ends of each rotor bar. Initially operated multiple-contact (32) rotary rheostat was used to short resistances when motor attained full operating speed.



1895 Patent drawing (No. 534,088) of the motor shown above, issued to Robert H. Marston in 1895.

Source of picture: The Westinghouse Historical Collection, Edison Institute, Dearborn, Mich.

1901 One of the first of the large polyphase induction motors built in 1901 by General Electric, at Schenectady, N. Y., for the Edison Electric Light Co. and equipped for operation at 2200 V. A and 2200 V. This single-phase motor, with 12 poles, weighed about 70 lb. Although a line of these motors were built in 1901, the idea remained dormant for nearly 20 years. Then a renewed interest in the importance of an induction motor was shown.





1879 Siemens & Halske built the first practical electric locomotive. Used 1-hp 150-volt series-wound dynamo, powered through third rail.

Motor used for Edison's experimental locomotive at Menlo Park, 1880, was based on high efficiency shunt-wound dynamo with low resistance armature and high resistance field.



1887 Track of first Sprague trolley. It used a 7½-hp 1200-volt motor. The motor was connected to the overhead wire through a sliding contact shoe. The motor was connected to the return rail through a double induction through rail-side pinions. Ends of motor frame were pivoted on steel.

An early Otis electric elevator installation. Like predecessor hydraulic types, it was operated by a hand rope in the car. Drive was by worm gear from a motor made by Rudolph Eickemeyer. Multivoltage speed control by Ward-Leonard system came two years later, when Otis Electric Company was organized to build motors and controls for elevators.

1890

1915 The "New Mexico" was the first all-electric battleship. Main gun drives to galley ranges. Its four 7000-hp propulsion motors were supplied from two 15,000-hp turboalternators. Deck winches for naval vessels had been electrified in 1895; gun turrets in 1896, using Ward-Leonard system of variable speed control. Battleship "Brooklyn."



Transportation

DURING THE 1870s, Siemens & Halske, Berlin, was the first to successfully apply a motor in electric traction. In 1879 he demonstrated a 3-hp locomotive pulling a string of cars. A year later Edison built an experimental railway at Menlo Park, although his locomotive never was commercialized, it represented a milestone in electric traction. The next few years new street railways sprang up all over the country. The one installed in 1887 by the City of New York in Manhattan was the first. By 1890, as electric traction systems throughout the world, notably Leo Daft, F. M. Bentley & W. H. Knight, Charles

Siemens is also credited with the building of the first elevator (1880). The driving motor was mounted under the car. Several freight elevators were powered by electric motors in 1880. The commercially successful elevator was the Otis worm geared machine introduced in 1889. First automatic elevator was built in 1890. The first all-electric elevator was built by Otis in 1890.

It was the first time that the first application of electric drives was made in two fireboats by the Manitowish Dry Dock Co. Within a few years such drives were applied to naval vessels.

Three-speed d-c motor 1000-2750

Its belt-driven motor, while operating in dynamo type. Speed changed by changing resistance in the line. In 1888 D.C. motors of 85-hp were used to run elevators, and a 15-hp motor of the same type drove a Blakely Corbitt printing press in 1888.



Industrial Applications & Mill Drives

EARLIEST successful application of a motor was to a mine pump drive in South Wales, Great Britain, in 1850. It ran for five years before being replaced by a steam engine. At the Paris Electrical Exposition in 1881, motors were shown driving pumps, rock drills, elevators, railways, machine tools, and sewing machines. In the first year to apply motors, many applications fizzled. At Besançon, France, in 1879, plowing was done by electricity, anticipating the gasoline tractor. In 1883, a battery-operated Siemens motor weighing 100 lb was geared to a screw propeller for a balloon. Motor-driven pumps, saws, and drills were made in the United States in 1880.

they were not commercially feasible. Mine hoists were successfully motorized in 1888. Cranes were given earlier applications.

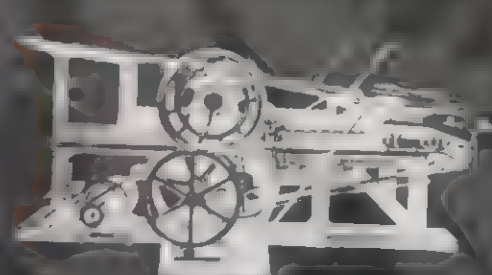
On this page are shown some prototypes of more successful applications.

Sprague motors were applied to looms in 1888 but it was not until 1894 that textile mills were motorized on a large scale using group drives. In that year four 100-hp d-c induction motors were installed to drive all the machinery in the Columbia (S.C.) Mills. This represented a big advance: the largest d-c motor made up to that time were 10 hp. Today, most looms are individually motor driven.

1898 Because commercial ice plants were operated by licensed engineers, the steam engine long held sway as a refrigeration compressor drive. Nevertheless, here is a reproduction of a small 4-ton "automatic" refrigerating machine driven by a 14-hp d-c motor offered by the De La Vergne Refrigerating Machine Co.

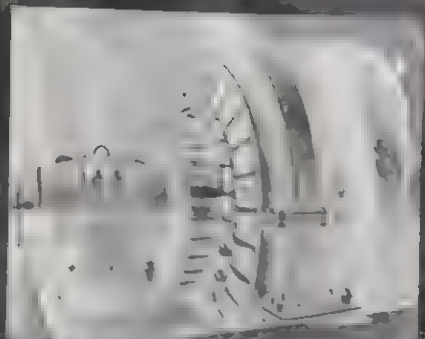


1900 An early dough roller driven by a 25-hp d-c motor. Motor has manual starter. Screen protection is typical of early work.



1895 Motors replaced steam engines for driving press in 1895. By 1897, motor-driven press was common. Photo shows motor of the press built-in by the press builder.

Motor-driven press is shown with belt drive around 1895. By 1897, motor-driven press was common. Photo shows motor of the press built-in by the press builder.



1904 While electric motors had been used in steel mills for some time, this photo shows the first motor-driven roller drive in the U.S. Photo shows motor of the roller drive installed, 1904. Photo shows motor of the roller drive installed, 1904.



Machine Tools

1888 Early metal working plants used by Sprague automatic motor from an early advertisement (1888) of Sprague Electric Railway & Motor Co. in "The Electrical Worker."



1890 In 1890 Baldwin Locomotive Works motorized its entire erecting shop. Steel frames were constructed to support motors, such as this 4-kw Gibbs d-c motor seen driving a Bement-Miles radial drill.



1896 Early portable drill for countersinking flush rivets in structural iron. Driven by Bullock Type B d-c motor of 5 to 10-hp, with magnetically latched manual starter mounted on top of frame. Coolant tank added weight to worker's front.

As applications of motor-driven machine tool drives were made, machine-over heads, a few other instances of applications of Sprague motors to lathes were recorded in the Boston area in

first instance on record in 1889, electrically equipped with the Baldwin Locomotive Works in Philadelphia in 1890. Besides four machines equipped with motor drives included horizontal and vertical boring mills, shapers, multiple-spindle drills, radial drill, 90-in. lathes, three 8-in. wheel lathes, four planers, the largest with 36 ft table, a shaper, and three locomotive frame slots.

Most of the motors were d-c shunt-wound machines rated from 4 to 14 kw. One 20-hp motor drove the big

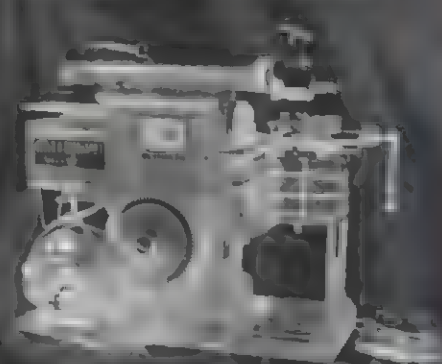
The Westinghouse plant at East Pittsburgh was probably the first to be driven by polyphase a-c motors (Tesla) at the turn of the century. General Electric was also among the first to adopt individual motor drives to machine tools in its own shops.

Published records of motor drives go back to 1888

and 1897. These included gear, mill, shilling machines, drilling machines, horizontal boring machines, and cold saws. Some motors were three-phase motor-driven.

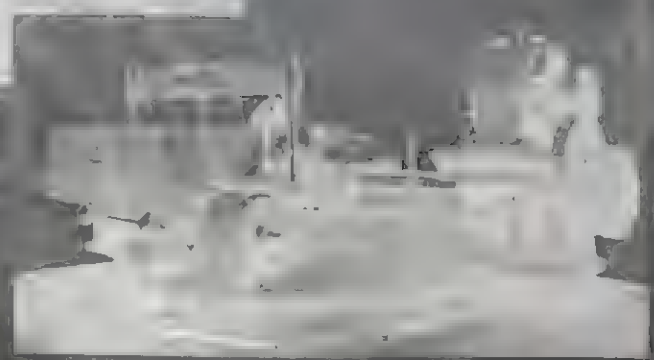
By 1897, the practice of motorizing machine tools had become general. Multi-motored machines were made almost 50 years later (see Newton cold saw). In 1900, the Westinghouse plant at East Pittsburgh had five motors, including 207 1/2-hp, including the 100-hp main drive motor and 100-hp driving motor for the mill. Air compressor machines was driven by 100-hp motor. Electric drives using variable voltage control systems and reversing were not established.

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1897 Machine shown Sprague d-c shunt-wound motor was used directly to drive mill. Conspicuous drive machines were used in 1910, until replaced by machines until about 1940.

For the purpose of the power requirements, the motor technology for railroad shops was not good. Machines built to be equipped with induction motors were by the manufacturer. Typical examples: the 30-in. locomotive driving wheel lathe driving 30-hp, 220-volt d-c, 500-1000 rpm C-E motor. Prior to 1900, machines had been built using open type motors.

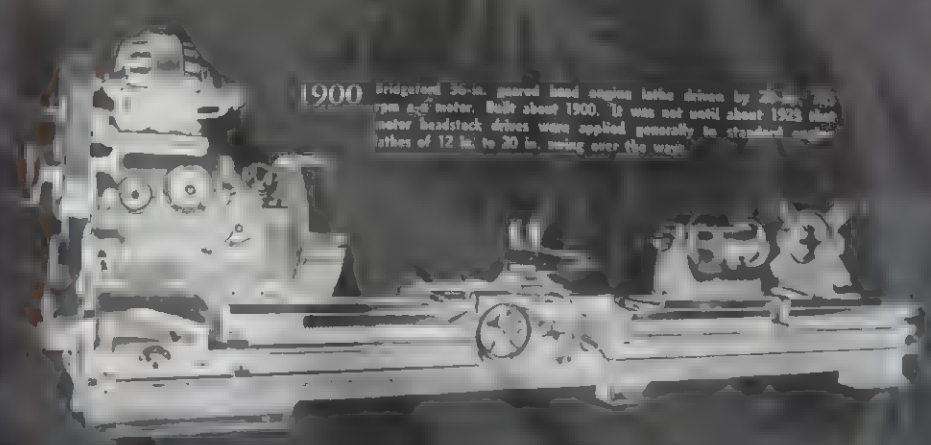


1900 Newton universal type cold saw cutting-off machine, driven by two Westinghouse Type C 3-c crane motors recovered by Yoda, Lamson, Westinghouse and Nelson patents. Drive motor 5-17-hp at 1000 rpm; index motor 3-5-hp at 300 rpm. Introduced in 1897, the Type C induction motor had a rotating squirrel cage secondary and gave high starting torque, with running slip of 3-4 per cent. It was also the first motor to use an autotransformer for starting.



1906 First attempts of manufacturers to motorize planers led to motor geared-to jackshaft which was belted to conventional forward and reverse pulleys. On larger planers, a separate motor was added to power tilt elevation, and in one of the largest machines built by the Besant Works in 1907, five functional drive motors were built-in.

1900 Bridgford 36-in. geared head engine lathe driven by 20-hp, 750 rpm a-c motor. Built about 1900. It was not until about 1923 that motor headstock drives were applied generally to standard machine lathes of 12 in. to 20 in. using over the ways.

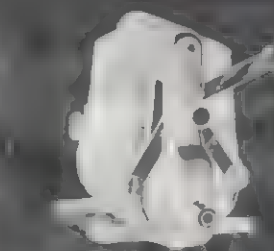


Domestic Appliances

1882 First home appliance to be motorized was the sewing machine in the above photo from the Scientific American of 1882 shows "double induction" motor drive was the invention of William W. Greaves of the Electric Dynamo Company and was applied to both sewing machines and dental drills. Battery operated, this primitive little d-c motor took its name from the observation that if the field were left open and the armature energized, motor would rotate slowly; with field shorted, motor would speed up. Greaves surmised that currents of induction developed in the shorted field polarized the fixed magnet continuously. This 1-hp motor had an armature wound by a cylindrical electromagnet (Siemens ring winding), while the field consisted of a soft-iron cylinder wound with two large ring coils.



1884 (Above) Variable-speed sewing machine motor designed by Philip Diehl in 1884 in which speed was controlled by varying the air gap. Base carries upper core and pole of field magnet attached to it, while lower pole piece is hinged at rear and is pulled away



from armature by hand. Armature is of the Siemens H-type. At right is a variation of Diehl variable air-gap motor only 5 in. high, operated off a battery.

1886 At left is another early sewing machine driven by a direct battery-operated motor made by Curtis, Crawford & Wheeler Co.



1889 First ceiling fan patented in 1889 by Philip Diehl. Decorative frame carried grease lubricated ball thrust bearing which supported fan weight. Speed for 8-ft. blades, 200 rpm. Later, in 1895, Diehl patented a fan with blades arranged inside rotating-ring armature and field magnet outside.



Adaptation of motor drive to wash tub shown 1900 above, using Emerson Motor 104-115 volt d-c motor. Early rubber washer in 1914 was driven by Cracker-Wheeler 36-hp 115-volt 1720 rpm d-c motor. 1914





1905 Heated drier was introduced in 1905, a direct motor-driven heater with either gas or electric heat was developed. Drive was from a Reynolds $\frac{1}{2}$ -hp, 1725-rpm anti-clockwise motor driving through geared friction pulleys. In 1907 a belt-driven model was offered that often was connected to the same utility motor used to drive the first electric clothes washing machines.



1916 When it appeared on the market in 1916, was this Beca electric kitchen power unit. Driven by a Reynolds $\frac{1}{2}$ -hp, 1750 rpm motor, it used the high speed shaft for cutlery grinding wheel, and vertically adjustable 92-rpm driving arm for mixing batter or driving conventional hand-type meat grinder, coffee mill or ice cream freezer. Table measures 35 by 10 $\frac{1}{2}$ in.



1916 Pioneer Kelvinator refrigerator compressor unit used to supply brine tank in ice-refrigerator cabinet. Model shown was produced from 1916 through 1920. Coils are cut away to show cylinder compressor driven by flat belt from $\frac{1}{2}$ -hp regulation induction motor. In 1924 Kelvinator introduced a self-contained unit with motor-compressor in bottom of cabinet.



1908 Original Hoover vacuum cleaner introduced in 1908 and the latest Hoover Junior apartment house model brought out last fall. First model weighed 40 lb. and was driven by $\frac{1}{6}$ -hp motor at 1750 rpm, either a split-phase induction motor or a 4-pole universal type. Latest model weighs less than 14 lb. The influence of the industrial designer is plainly seen in new model.



1927 This refrigerated model presented motor unit in refrigerator unit introduced in 1927, with the familiar General Electric monitor top cabinet seen above. Motor was $\frac{1}{4}$ -hp and box capacity was 1 $\frac{1}{2}$ cu. ft.

Motor Pump Motor 1870



1886 Many and strange were the forms of early A.C. bipolar motors. This one was made by the Eddy Electric Mfg. Co. of Windsor, Conn. Eddy also made dynamo-electric machines for Mather Electric Co. Eddy motors were advertised as "the highest efficiency." An upside down version of the Eddy motor was built about the same time by Westinghouse.

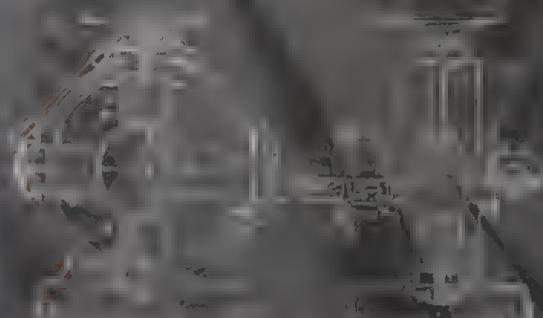
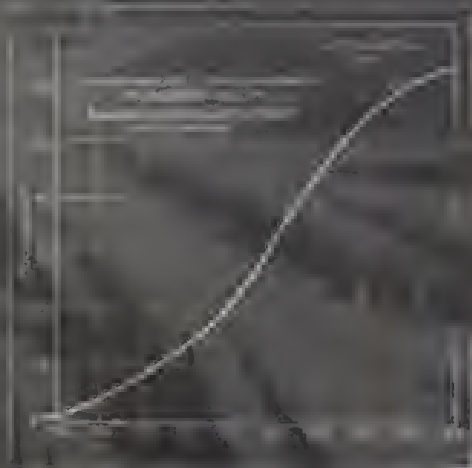
Many of the early A.C. motors had been built with cast-iron frames. Improvements were largely made in the materials. These included the adoption of silicon steel for soft-iron laminations, the use of ball bearings, adoption of pressure-welded joints, the use of laminated copper for squirrel cage rotors, and the use of explosion-proof construction in a few special materials including thermoplastic coated magnets. High-grade insulating materials also welded steel frames in place of cast-iron, although the latter is still used.

First motor standards were issued in 1913 by the American Power Club, predecessors of the National Electrical Manufacturers Association (NEMA), and generic standard sizes were established.

In 1880 there were 100,000 sewing machines. According to the Census Bureau, the number of sewing machines in 1880 was 100,000.

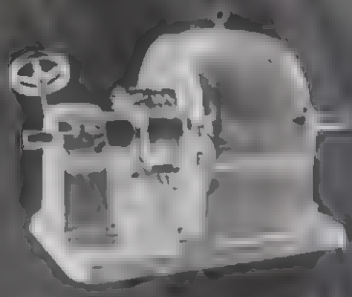


1893 This Emerson motor is another early single-phase repulsion-start, induction run motor (see p. 78) with cammed brush shifting device. When hand lever was moved to "start" position, brushes contacted commutator. After motor reached normal speed, moving lever to extreme right cammed brushes off commutator.




1898 Fold pieces of Stew variable-speed shunt-wound motor with plunger, core adjusted re- A.C. motor were made hollow and pre-

dictically with respect to armature, by means of handwheel and screw. Withdrawing plunger increased air gap and reluctance and hence speed of rotation.

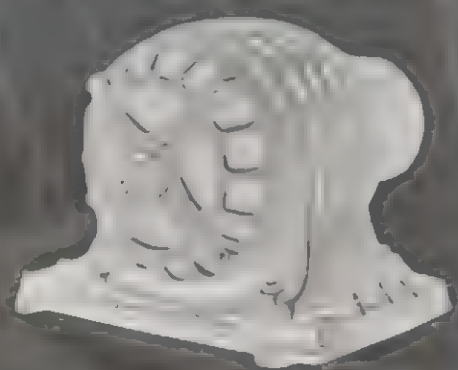


1906 Another type of variable-speed A.C. motor. In this 10-hp, 1700-1200 rpm Balderson motor, stepless speed adjustment was obtained by shifting armature axially with respect to center-line of field poles.



Paragon 31.c Bipolar meter with buret-type
 rated at 1/2 hp, 110 volts. New in Edison Incite.

Electric Motor Power Installed in Various Industry Groups, Driving Production Machinery*		ELECTRIC MOTORS ACCM. H.P.
INDUSTRY	1925	1926
Food and kindred products	1,000,000	1,652,000
Textile manufacture	1,000,000	1,000,000
Textile-mill products and other fiber manufacture	1,000,000	1,144,229
Apparel and other finished products made of fabrics and similar materials	1,000,000	31,500
Lumber and timber basic products	1,000,000	1,000,000
Structure and finished lumber products	1,000,000	1,000,000
Paper and allied products	1,000,000	1,000,000
Printing, publishing, and allied industries	1,000,000	1,000,000
Chemical and allied products	1,000,000	1,000,000
Products of petroleum and coal	1,000,000	1,000,000
Other products	1,000,000	1,000,000
Food and leather products	1,000,000	1,000,000
Plastic products	1,000,000	1,000,000
Other products and their products	1,000,000	1,000,000
Nonferrous metals and their products	1,000,000	1,000,000
Metallic machinery	1,000,000	1,000,000
Machinery (except electrical)	1,000,000	1,000,000
Automobiles and automobile equipment	1,000,000	1,000,000
Transportation equipment except automobiles	1,000,000	1,000,000
Miscellaneous industries	1,000,000	1,000,000
Total	1,000,000	1,000,000



1908 Fairbanks Morse in 1908 introduced a complete line of half-bearing induction motors ranging up to 60 hp at 1750 rpm. Electro Dynamic Works had applied half bearings to a few d-c motors the year before. Winding had cast copper-alum rings.

... And Some Late Models

Actual air gap meter introduced by Fairbanks-Morse in 1940. Rotor with skewed cast copper windings is same diameter as stator



Sanitary motor made by Louis Allis Co.
represents ultimate in streamlined de-
sign. It is the most efficient, most reliable,
most economical motor ever made.



and permit loading down when used to drive machinery in ~~open~~ processing plants. Base is entirely closed

Remnants in Motor Design



1910



1913



1917

Cast Iron Era of Motor Frames

These three Rabbin & Myers motors are all 5-hp, 60-cycle polyphase induction motors, the first two at 1750 rpm, the last at 1200 rpm.

Today's motor of the same frame size is approximately 40% lighter due to use of steel for frames and less bulky windings.

Evolution of Motors for Deep Well Pumps

FOURTY YEARS AGO deep well pumping was stimulated with the advent of high-speed turbine centrifugal pumps designed for installation in drilled wells, replacing the old fashioned plunger pump. To develop arid ranch lands in Texas and California water had to be lifted several hundred feet and in huge volumes. Turbine pumps required high speed motors, capable of operating uninter-

ruptedly in torrid temperatures. The first motor applications were the standard horizontal types, belted to the pump head. Then the motors were turned up on end with a flexible coupling connection to the pump shaft. Finally a more compact design was adopted, permitting the motor to be lowered and the thrust bearing relocated in the motor.

A little attempt was made to integrate the motors with the pump head around 1930. At that time developers introduced a motor with protecting canopy by U. S. Motors. In 1935 five to turbine pump manufacturers to develop lines of their pump heads to correlate with U. S. Motors. Motors ranging from 5 to 500 hp are being used in deep well pumping.

Over-all efficiency of deep well pumps and motors have been increased to 80 per cent or better by elimination of belts, improved electrical design, precision machining, use of ball bearings and better lubrication.



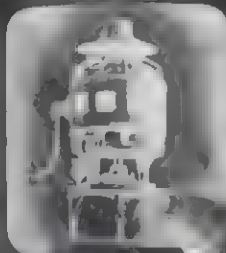
1908

With advent of deep well pumping, original "U.S." motors were open horizontal type, with quarter turn belt drive.



1916

Modified open-connected motors with feet or base were introduced to eliminate belts.



1922

Introduction of hollow-shaft eliminated necessity of flexible coupling. Thrust bearing at top.



1930

Streamlining and protection of motor against weather was introduced in the early thirties.



1949

Final development of the "sealed" type has added the ultimate in streamlining.

ELECTRICAL MANUFACTURING



1896 1/2-hp



1914 Burke 25-hp, 480-volt, 3-phase induction motor shows cast iron frame construction typical of this period



1919 Typical of the swing in welded steel frame design in the period from 1919 to 1936 is this Burke 5-hp, induction motor



1921 1/2-hp



1921 1/2-hp



1949 Clean-cut design of the modern motor is typified in the welded steel frame construction of this Burke NEMA 284 frame size motor



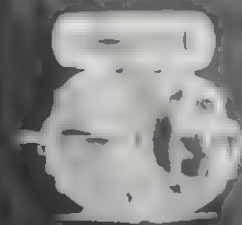
1931



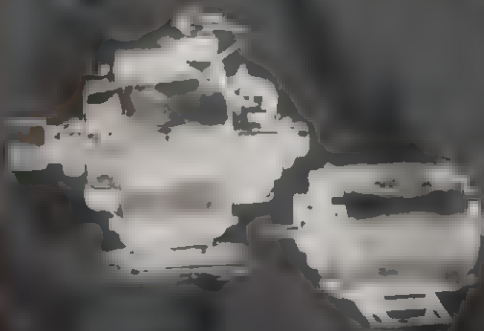
1940 1/2-hp

Size and design changes in 1/2-hp motor. The vertical view at right shows the motor in its original design.

When first built, the condenser for a single-phase capacitor motor was as big as the motor itself is. After these motors were commercially rejuvenated in the early 30's, rapid progress was made in reducing the capacitor size. Pictures at right show results of four years of design change in General Electric 1/2-hp motor line. Burke shows



1931

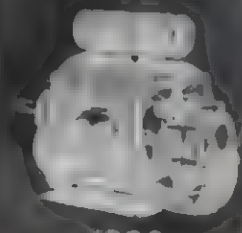


1896

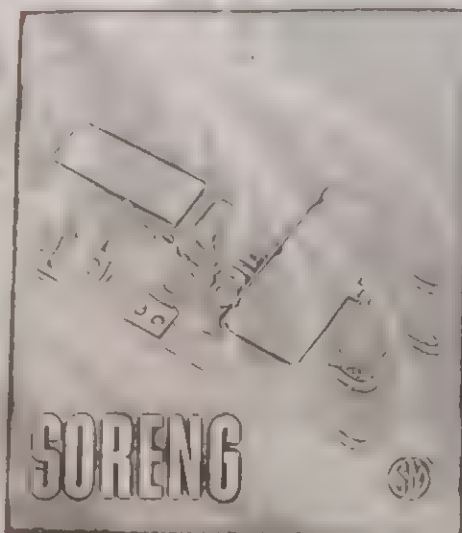
VS

1948

These two motors are both 1/2-hp, single-phase motors in operation in the same pumps. At the time Pittsburg & Woodmen designed them, the 1896 motor was 13 1/4 in. high, weighing 100 lb. The 1948 motor was 7 1/4 in. high, weighing 22 lb.



1938



Solenoid-operated switch

Controlling two separate but synchronized electrical circuits, this new SORENG Solenoid-Operated Switch has many applications for clothes dryers and other household appliances—in addition to other applications of a wide variety.

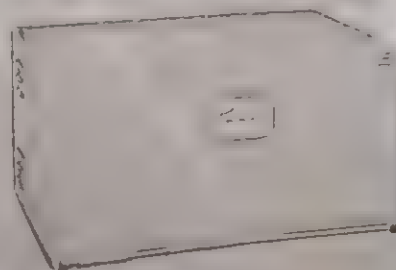
It is a double-pole, single throw, "normally open" switch with double-break contacts in each circuit. With the powerful SORENG TT type solenoid as the "make-and-break" actuating device, high contact pressures can be maintained in the switch. In fact, this solenoid-operated switch has been tested with 25 amperes at 250 volts A.C., and after 100,000 actuations was in perfect working condition.

Designed to make and break two circuits at the same time, the switch is available in the "normally open" type, and with minor changes can be supplied in the "normally closed" type. Additional information will be furnished if desired. When requesting, refer to Department M95.



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to the average frequency in percentage, with three scale ranges—0.3, 1.0 and 3.0 per cent. It responds to rates from 0 to 200 cycles. Wow components are indicated



New analyzer designed by Amplifier Corp. of America, New York, measures flutter, wow and drift to standards set up by SUPE.

by the amplitude of pointer swing. Drift is observed by gradual sliding up and down the scale of combined flutter and wow reading. Hum, noise switching surges and other transients have no effect on readings. □ □ □

History of Development and Application of the Electric Motor

See pages 76 through 89

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- 1831—Pret Henry's machine Smithsonian Institution
- 1837—Davenport model Smithsonian Institution
- 1850—Page's motor Smithsonian Institution

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- 1860—Pacinotti machine "The Electric Motor and Its Application," T. C. Martin, Joseph Wetzel, 1895, W. J. Johnson Co.
- 1870—Gramme machine General Electric Co.
- 1872—Drum winding "Menlo Park Reminiscences," Francis Jehl, Edison Institute
- 1892—Edison General Electric motor, "The Elec
- 1884—Sprague motor—Edison Institute

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- 1876—Plating generator—Hanson-Van Winkle-Munning Co.
- 1885—Brush motor—"The Electric Motor and Its Applications," Martin and Wetzel
- 1892—Edison General Electric motor, "The Electric Motor," Martin and Wetzel
- 1878—Thomson generator—General Electric Co.
- 1887—Thomson repulsion motor General Electric
- Sketches from "Alternate Current Commutator Motors," W. A. Flynn, 1906

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- 1888—Tesla's model "Inventions, Researches of Nikola Tesla," T. C. Martin
- 1892—Tesla motor Edison Institute
- 1895—Induction motor, Westinghouse Electric Corp.
- 1895—Shaded pole motor Patent drawing
- 1901—Capacitor motor General Electric Co.

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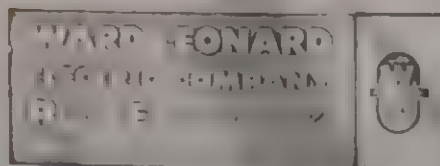


because Ward Leonard has that many types of resistors in stock

You can get immediate delivery on Ward Leonard Vitrohm wire-wound resistors—both adjustable and fixed—in watt ratings from 5 to 200 and resistance values from 1 to 150,000 ohms.

Resistive element embedded in Ward Leonard's exclusive crazeless vitreous enamel, gives these resistors consistent accuracy and stability even under the most prolonged adverse operating conditions.

Write for Resistor Catalog D130 Ward Leonard Electric Co., 34 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.



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1880—Edison locomotive. Edison Institute
1887—Sprague trolley. Julian K. Sprague
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1915—"New Mexico." New York Public Library

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Type C motor. Westinghouse Electric Corp.
1900—Planer. Niles Tool Works Co.
1900—Lathe. Consolidated Machine Tool Corp.

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Thor washer. Crocker-Wheeler Electric Mfg. Co.

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1898 to 1942—Size and rating comparison. General Electric Co.
1933 to 1948—Capacitor motors. General Electric
1896 to 1948—Single phase motors. Wagner Electric Corp.

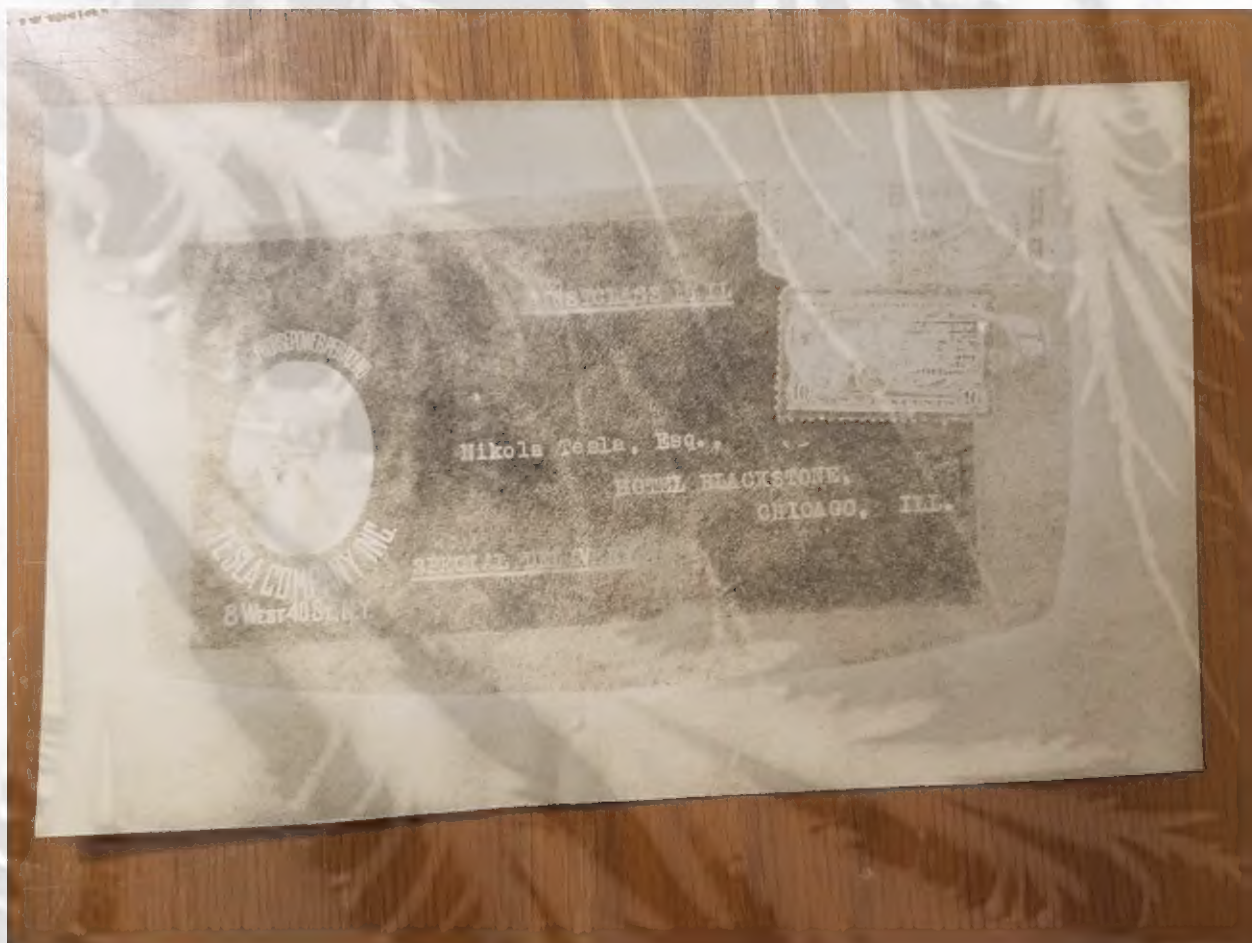
AGRICULTURAL FIELD

May, 1944

Report of Development in Application of the "AGRICULTURAL"
total tribute to the people of the world







by the world's brightest minds, and the ends which they have in view are generally pretty clearly foreseen. Accidental discoveries will often be made while in pursuit of a particular idea or invention, and these may be set down as among the fortuitous inventions of the present age.

Prior to the present century of material progress and invention the great discoveries were nearly all the products of chance observation. The story of the boy watching the steam forcing up the lid of a cooking vessel, which suggested to him the power of steam, and the account of Newton establishing the existence of gravitation through the falling of an apple, are familiar popular illustrations of how the great discoveries of the past were made in an accidental manner. Faraday, the great scientist and inventor, himself confessed that the fortuitous discovery made by rubbing a piece of amber released "an invisible agent which has done for mankind far more wonderful things than the genie of Aladdin did or could have done for him." The discoverer of gunpowder was as much startled by what he had done as the world which soon heard of it. A child actually first discovered the magnifying power of two lenses placed at certain distances apart, and its father, being an optician, took the suggestion up and produced the first telescope out of a tube of pasteboard. The manufacture of leaden shot by dropping molten lead from a high altitude was discovered by chance, and Arkwright obtained his idea of spinning by rollers by chance observation.

The list of ancient discoveries and inventions produced fortuitously could be extended indefinitely, and even those of modern times produced accidentally would make a formidable list. But most of these latter were also directly attributable to the genius and hard work of the inventors. Thus Professor Roentgen would

never have discovered his marvelous X-rays had he not been experimenting in a dark room with a Crooke's vacuum tube. Neither would Edison have invented the phonograph had he not experimented over and over again with the telephone, which one day accidentally set him thinking when the vibration of his voice had sent the fine steel point of the mouthpiece into his finger.

The modern inventor and discoverer of new laws of the material and mechanical world is a man who pursues his profession with the same steadfast purpose that a physician or lawyer devotes to his calling. The day of the purely fortuitous invention has mostly passed. Even the inventor of the small things which amuse or supply a long felt want is usually one who has devoted years to the study and experiment of certain lines of work. The inventor of the simple puzzle called "pigs in clover," which had a remarkable run and netted a small fortune to its discoverer, spent nearly a lifetime in making popular games and puzzles before he hit upon the thing that made his reputation. He was a genius in this particular line, and he applied himself assiduously to the invention of new games and toys. Sam Lloyd, according to his own account, studied mechanics in all its branches, and, while gifted with certain ingenuity which enabled him to see patentable ideas, he pursued his studies as steadily and persistently as if he were working out a mathematical demonstration.

Modern inventing has become a profitable and lucrative profession for those who have the inventive faculty and the willingness to pursue it as others do a business or practice. The world owes much to the inventors of the age, but if our life and method of living have been revolutionized and improved by their ideas their rewards have been ample. The successful owner of a popular patent receives remunerations that are

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C O P Y.

Tesla Laboratory.
Long Island, N. Y.

New York, June 24, 1908.

Edward W. Whitaker, Esq.,
Patent Attorney,
Washington, D. C.

My dear Sir:--

I regret very much that your communication containing the enclosed clippings has been overlooked. Permit me, at this late date, to thank you for the expression of your appreciation.

The efforts of Loomis in wireless telegraphy may have been the first in this country, but not abroad. The records show many anticipations in France and England.

The devices used until quite recently were, however, for all practical purposes, worthless. Neither Marconi or anybody else has succeeded in transmitting a message to any appreciable distance without the use of my apparatus. Last October the Hertzian appliances were abandoned and my apparatus substituted and the messages were, of course, easily transmitted. There is nothing particularly meritorious in the attempt, however, for I have already in 1899, as you may see from my patent of April 18, 1905, passed a heavy current around the earth (over 100 amperes) and excited the planet resonantly.

As a matter of fact, to transmit wireless messages, telegraphic or telephonic, under practical conditions and to appreciable distances, five of my discoveries are necessary:

First, my method of oscillatory conversion by means of condensers; second, the so-called "Tesla transformer"; third, my apparatus for the transmission of energy without wire, comprising grounded, resonant circuits; fourth, my methods and apparatus for individualizing signals, and, fifth, my discovery of the stationary waves.

Believe me,

Very truly yours,

N. Tesla.